PORTLAND WATER BUREAU

Capital Improvement Program Annual Report

Fiscal Year 2017-2018

October 15, 2018

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

CITY OF PORTLAND, OREGON 1851

Contents

CIP Highlights

The Portland Water Bureau's (PWB) Fiscal Year (FY) 2017-18 Five-Year Capital Improvement Plan (CIP) included approximately $519 million in water system infrastructure needs for the five-year period beginning in FY 2017-18 (in FY 2017-18 dollars). For FY 2017–18, the one-year adopted budget allocation was about $109 million. The final revised budget was about $75 million and final expenditures were about $69 million.

The Water Bureau spending in FY 2017-18 reflects its place as a utility providing water to a growing and changing city. Over 1,000 new water service installations were completed in the fiscal year. Hundreds of individual projects improve the system to keep water flowing every minute of every day. The bureau's largest project, Washington Park Reservoir 3, will provide earthquake-proof water storage for Portland's west-side businesses, medical centers, and homes. The bureau also began planning for the Bull Run Filtration System project, PWB's largest project in its history.

About a third of the $69.4 million spent in FY 2017–18 was for investments in the distribution system. This included projects to ensure reliability of the pipes, services, pump stations, meters, and valves that are essential to reliably providing water to customers. The Hannah Mason Pump Station, a major project to replace and relocate one of the bureau's oldest pump stations, became operational at the end of the fiscal year. SW Vista, SW Bancroft and Cornell Rd water main improvement projects installed a combined 10,000 ft of water main.

Another third of the $69.4 million (approximately $33 million) was spent in the Transmission and Terminal Storage Program. Most of the funds were for the continuing construction on the bureau's largest project, Washington Park Reservoir 3.

Investments for the Customer Service, Supply, Support, Regulatory Compliance and Water Quality, and Treatment programs made up the remaining third of the capital spending for the fiscal year. PWB completed a technology upgrade to support the Customer Service Team and field communications as well as a new water quality laboratory.

Capital Programs

Capital program planning at the Water Bureau is a collaborative effort among CIP Planning, Asset Management, and Engineering Management teams. CIP and Asset Management staff conduct analyses of project costs, benefits, and timing. These analyses are provided to Engineering Management to support decision-making and project sequencing. CIP Planning staff also produce financial and project status reports and participate in management committees to oversee the delivery of capital projects.

The Water Bureau has seven major budget programs: Customer Service, Distribution, Regulatory Compliance and Water Quality, Supply, Support, Transmission and Terminal Storage, and Treatment. The primary drivers of the bureau's capital work have been ensuring the reliable functioning of the drinking water system, replacing assets that are at or near the end of their useful lives, achieving compliance with federal and state drinking water regulations, and supporting the continued growth and economic vitality of the city. This section provides a brief overview of each of the capital programs.

Customer Service Program

The focus of the Customer Service Program is customer contact, billing and collection, water conservation, and providing for the bureau's facilities and grounds. One of the goals of the Customer Service Program is to improve facility security and support emergency preparedness operations.

Distribution Program

The Distribution Program provides water to customers through the network of distribution mains and related facilities. The Distribution CIP Program ensures the reliable functioning of more than 2,000 miles of distribution mains as well as the pump stations, storage tanks, pressure-regulating stations, control valves, fire hydrants, drinking fountains, and customer service connections that deliver water. The Distribution Program also provides for the relocation of, and adjustments to, water pipes to accommodate projects of other public agencies and projects to support Portland's recent redevelopment surge.

Regulatory Compliance and Water Quality Program

The Regulatory Compliance and Water Quality Program provides for meeting federal and state standards for drinking water quality, water delivery operations, and meeting environmental standards related to the bureau's operations in the Bull Run Watershed and the Columbia South Shore Well Field. Federal standards include the source water treatment regulations in the Long Term 2 Enhanced Surface Water Treatment Rule (LT2 rule) as administered by the State of Oregon Health Authority (OHA). In 2012, the OHA issued the bureau a variance from the LT2 treatment requirement for source water from the Bull Run Watershed. The variance required the bureau to monitor Bull Run source water for *Cryptosporidium*, maintain all legal land-use protections, and monitor and manage potential sources of contamination. In early 2017, the Water Bureau's monitoring found *Cryptosporidium* concentrations above the threshold allowable in the variance. In May 2017, the OHA notified the Water Bureau that it

would revoke the variance and required that the Water Bureau provide for conventional compliance with the LT2 rule, through treatment.

The bureau's compliance with the Clean Water Act and the Endangered Species Act (ESA) also includes capital projects described in the Bull Run Habitat Conservation Plan (HCP), a regulatory agreement with the National Marine Fisheries Service and the Oregon Department of Environmental Quality. HCP compliance projects include negotiating conservation easements next to selected streams and other projects to improve habitat for ESA-listed fish.

Supply Program

The focus of the Supply Program is maintaining the reliability of the water supply through effective management of the water supply elements. The Supply Program includes both the Bull Run Watershed and the Columbia South Shore Well Field (CSSWF) backup supply. Projects in the Bull Run Watershed address the proper functioning of watershed assets, such as the dams, and the roads that provide access. Projects in the well field ensure the reliable functioning of the groundwater backup supply. The five-year CIP does not include a major expansion of the well field beyond its current capacity.

Support Program

The Support Program includes bureau-wide work supporting programs in areas such as finance, data management and technology solutions, human resources, project planning, and master planning. Master planning identifies the need for, and timing of, system improvements or replacements and the most effective strategies for investing in bureau assets. PWB uses asset management practices—such as evaluations of risk, life-cycle costs, and benefit-cost ratios—in conjunction with master planning to identify strategies for repairing, rehabilitating, or replacing system elements.

Transmission and Terminal Storage Program

The Transmission and Terminal Storage Program provides for conveying water from the supply facilities to the retail distribution system and service delivery points for wholesale customers. Projects in this program include the major regulatory compliance and seismic resilience project at Washington Park and ensuring the reliability of the large conduits and transmission mains.

Treatment

The Treatment Program provides for the application of chlorine, ammonia, and sodium hydroxide, as well as regulatory and process-control monitoring for water treatment. The Treatment Program is a key part of the bureau's responsibility to meet or exceed the federal and state requirements for a water system utilizing unfiltered surface water and groundwater sources. At the beginning of FY 2017-18, City Council resolved that filtration be the option for treatment and directed PWB to start planning a treatment facility.

Major Projects by Program

Total CIP expenditures were about $69.4 million of the $75 million total revised bureau CIP budget for Fiscal Year 2017–18. Table 1 on page 12 is the Capital Program Status Report from the FY 2017–18 fall budget monitoring process. Table 2 on page 13 shows the summary by program and subprogram of the revised CIP budget to actual expenditures for the projects profiled in this report and appendix. The differences in the totals for Tables 1 and 2 are the result of using different data sources and parameter selections. Table 1 does not include the costs for fleet vehicle purchases and shows total expenditures including reductions for project costs reimbursed by other City bureaus. Table 2 is more representative of all the costs that the Water Bureau is responsible for and does not include reductions in project totals due to payments received from other sources. Table 3 shows ongoing expenditures and other project details that are not profiled.

Customer Service

The Customer Service Program included a major upgrade to the bureau's Cayenta billing system with assistance from the Bureau of Technology Services. The upgrade improved the system functionality as well as a general upgrade to Windows server.

Distribution

In the five-year CIP plan, approximately $212 million—approximately 41 percent of the total adopted five-year CIP of $519 million—is dedicated to the Distribution Program, which includes projects in seven water subprogram areas: distribution mains, services, meters, hydrants, valves, pump stations and tanks, and field support. Approximately $28.8 million was spent in the Distribution Program during FY 2017-18.

Distribution-system projects were selected through a combination of recommendations from master plans and the Asset Management Program. Master planning identifies whole-system trends and deficiencies and asset management applies the lens of risk reduction and benefit-to-cost analyses. In FY 2017–18, the major distribution projects included a mix of those to improve system reliability and operations, reduce risks, and accommodate Portland's renewed growth. Notable projects in FY 2017–18 included the following:

Willamette River Pipe Crossing ($88 million)—To improve seismic reliability and provide reliable transmission between large east-side reservoirs and west-side retail and wholesale customers. The project is being procured and bids are higher than expected.

Fulton/Hannah Mason Pump Station ($18.6 million)—To modernize, replace, and relocate a west-side pump station that was past the end of its useful life (Figure 2). The project adds operational flexibility for west-side pumping. Construction on the project was nearly complete at the end of the fiscal year.

Willamette Boulevard Bridge Main Replacement ($4.5 million)—To increase capacity, strengthen the primary supply to North Portland, and reduce risks to the railroad beneath the bridge. The project continued the design phase.

Penridge Mains ($2.5 million)— This project is part of a suite of projects to take the Penridge Tank out of service, replace about 8,000 feet of water mains, replace the aging Greenleaf Pump Station under a separate project, and improve system capacity for emergencies. The project continued design phase.

Figure 2. The new Hannah Mason Pump Station in Willamette Park replaces the Fulton Pump Station and provides resilience to natural hazards, system reliability, and improved operating efficiency.

About five miles of new and replacement distribution mains and associated facilities were installed during FY 2017–18 to ensure reliability of the pipes, services, meters, hydrants, and valves that deliver water to customers. The bureau's major focus in the distribution mains subprogram was keeping pace with ongoing deterioration. In recent years, however, requests for mains to serve new development has been a significant part of the bureau's pipe work. The Distribution Program included replacement of obsolete equipment such as inoperable hydrants (Figure 3) and service lines as well as projects, such the Outer Powell Transportation Safety Project, to relocate water lines to accommodate other agencies' transportation projects.

Figure 3. Water Bureau new replacement fire hydrant inventory stockpile

Regulatory Compliance and Water Quality

The bureau invested approximately $1.5 million in the Regulatory Compliance and Water Quality Program. Major capital projects include work to ensure compliance with the Endangered Species and Clean Water Acts and a remodel of part of the bureau's existing Water Quality Laboratory. The new lab equipment gives the bureau the capability of conducting in-house analyses of *Cryptosporidium* in water.

Supply

Nearly $2.5 million was invested for improvements to facilities in the Bull Run Watershed and the Columbia South Shore Well Field (CSSWF). Approximately half of the funds were spent in the Bull Run Watershed on continued efforts to bring access roads up to current safety standards. The Headworks System Septic Replacement ($700,000) prepared Headworks facilities for upcoming upgrades. Additionally, Dam 1 Needle Valve ($3.8 million) Replacement will reduce the risks for dam failure and loss of life.

Support

The bureau funded approximately $2.2 million of CIP work in the Support Program, which includes master system planning as well as technology improvements. Master planning includes asset management studies to help guide the selection of major capital projects. During FY 2017–18, PWB began a multi-year master plan for the water-supply system as well as a water corrosion studies.

Transmission and Terminal Storage

System investments in the Transmission and Terminal Storage program were approximately $33 million in FY 2017–18. The majority of the funding (approximately $29 million) was for the construction on the Washington Park Reservoir 3 Project, which includes large-scale excavation and strengthening of the site (Figures 4 and 5). The project maintains compliance with the drinking water reservoir requirements of the LT2 rule, replaces one of the oldest elements in the water system, and retrofits the Washington Park site to withstand shaking from an earthquake and movement from a landslide. This complex, multi-stage project is slated to be completed by 2024.

Figures 4 and 5. Aerial view of construction on Washington Park Reservoir 3 in May, 2018 and retaining wall rebar mat assembly

Other projects in the Transmission and Terminal storage budget included the Tabor Reservoir Adjustments and two projects for the conduits that carry water from the Bull Run Watershed. Project work at Mount Tabor included installing a large transmission main to bypass the Mount Tabor Reservoirs, which are no longer connected to the drinking water system. Two conduit projects, Gresham Conduit 2 Trestle Upgrades and Conduit 3 Internal Inspection, are part of a systematic effort to assess and strengthen Portland's largest water pipes.

Treatment

In Summer and Fall of 2017, PWB began to implement Council direction to plan, design and build a treatment plan. PWB communicated with OHA regarding compliance measures during the next 10 years. PWB will continue the planning phase of the $500 million Bull Run Filtration project until 2020. Corrosion Control Improvements is the other major project in this program and during this past year the project began design of a corrosion control treatment facility at Lusted Hill.

Summary Tables

Table 1. Water Bureau Capital Program Status Report[a,b]

	FY 2017–18					FY 2018–19				
				Variance[c]					Variance[d]	
CIP Program	Adopted Budget	Revised Budget	Year-End Actuals	Amount	%	Adopted Budget	Fall BMP Revised Budget	Year-to-Date Actuals	Amount	%
Customer Svc	$418,000	$778,000	$714,601	($63,399)	-8%	$100,000	$100,000	$0	0	0%
Distribution	$38,462,000	$32,832,000	$23,725,526	($9,106,474)	-28%	$72,377,000	$38,838,400	$1,621,026	($33,538,600)	-46%
Reg Comp/ Water Quality	$2,300,000	$1,800,000	$1,422,553	($377,447)	-21%	$2,080,000	$2,080,000	$89,540	$0	0%
Supply	$5,781,000	$2,726,000	$2,464,275	($261,725)	-10%	$3,859,000	$4,609,000	$141,877	$750,000	19%
Support	$2,900,000	$3,050,000	$2,220,794	($829,206)	-27%	$3,000,000	$3,000,000	($74,632)	$0	0%
Transmission/ Terminal Stor	$57,989,440	$32,302,440	$32,450,268	$147,828	0%	$47,554,021	$35,629,021	($471,068)	($11,925,000)	-25%
Treatment	$1,370,000	$1,370,000	$1,265,737	($104,263)	-8%	$7,410,000	$7,410,000	($115,200)	$0	0%
Total	$109,220,440	$74,858,440	$64,263,754	($10,594,686)	-14%	$136,380,021	$91,666,421	$1,191,543	($44,713,600)	-33%

a Does not include fleet vehicles.
b Total is net of costs transferred to other bureaus for utility relocation cost sharing.
c Prior-year (FY 2016–17) variances compare Year-End Actuals to Revised Budget.
d Current-year (FY 2017–18) variances compare Revised Budget to Adopted Budget.

Prior-Year (FY 2017–18) Variance Description
Distribution: The reported expenses are under reported due to the inclusion of about $1.37 million in interagency revenue and the exclusion of about $3.72 million of fleet vehicle purchases. With noted exceptions, total Distribution Program expenses are $28.8 million, and the variance is -12.2 percent. Over $1 million in utility relocation work with BES was completed but not billed to PWB during the FY. Total CIP expenditures are $ 69.4 million for a variance of -7.35%.
Regulatory Compliance: The bureau received no responses to the solicitation for appraisal services, delaying the expenditures to acquire more conservation easements until FY 2018-19.
Supply: Process to obtain permits delayed completion of the Headworks Septic and Microwave Communications projects.
Support: About $350,000 of internal capital planning resources were shifted to Treatment to work on planning for the Bull Run Filtration Project.
In Total: Expensed work included

Current Year (FY 2018-19) Variance Description
Distribution: Delayed construction start of Willamette River Crossing, Jantzen, Penridge Mains projects.
Supply: Prior construction delays to acquire permits for Headworks Septic and Microwave Communications has spending continuing in FY 2018-19. Three failed prodution wells require repairs and/orreplacement.
Transmission and Terminal Storage: Revised cash flow for construction of Washington Park and Conduit Repair and Replacement reduction.

Table 2. FY 2017–18 CIP Budget to Expenses, July 2017 Through June 2018

Program	Water Program	Water Subprogram	Budget	Expenses[a]
CUSTOMER SERVICE	CUSTOMER SERVICE		$728,000	$650,723
	SECURITY/EMERGENCY MG		$50,000	$63,878
		Customer Service Program Total	**$778,000**	**$714,601**
DISTRIBUTION	DISTRIBUTION MAINS		$17,065,000	$11,590,703
	FIELD SUPPORT		$4,000,000	$3,808,042
	HYDRANTS		$1,800,000	$1,816,074
	METERS		$1,000,000	$764,205
	PUMP STATIONS/TANKS		$1,967,000	$2,340,569
	SERVICES		$7,000,000	$8,492,762
		Distribution Program Total	**$32,832,000**	**$28,812,355**
REGULATORY COMPLIANCE & WATER QUALITY	REG COMP & WQ		$1,800,000	$1,422,553
		Regulatory Compliance and Water Quality Total	**$1,800,000**	**$1,422,553**
SUPPLY	BULL RUN WATERSHED		$1,786,000	$1,378,995
	GROUNDWATER		$940,000	$1,085,280
		Supply Total	**$2,726,000**	**$2,464,275**
SUPPORT	BUREAU SUPPORT		$250,000	$398,836
	PLANNING		$2,800,000	$1,821,958
		Support Total	**$3,050,000**	**$2,220,794**
TRANSMISSION AND TERMINAL STORAGE	CONDUITS/TRANSMISSION		$3,043,440	$2,870,702
	TERMINAL RESERVOIRS		$29,259,000	$29,579,566
		Transmission and Terminal Storage Total	**$32,302,440**	**$32,450,268**
TREATMENT	WATER TREATMENT PROG		$1,370,000	$1,265,737
		Treatment Total	**$1,370,000**	**$1,265,737**
		Grand Totals	**$74,858,440**	**$69,350,582**

[a]Project totals have been rounded to nearest whole-dollar amount.

Table 3. FY 2017–18 Ongoing Expenditures

	Program	FY 2017–18 Actual (Year 1)	FY 2018–19 Plan (Year 2)	FY 2019-20 Plan (Year 3)	FY 2020-21 Plan (Year 4)	FY 2021-22 Plan (Year 5)	FY 2022–23 Plan (Year 6)
WBASPL	**Planning**	$1,822,000	$4,130,000	$4,130,000	$4,130,000	$4,130,000	$4,130,000
WBDIFS	**Field Support**	$3,808,000	$1,450,000	$1,450,000	$1,450,000	$1,450,000	$1,450,000
WBDIHY	**Hydrants**	$1,816,000	$1,030,000	$1,030,000	$1,030,000	$1,030,000	$1,030,000
WBDIME	**Meters**	$764,200	$6,200,000	$6,200,000	$6,200,000	$6,200,000	$6,200,000
WBDISV	**Services**	$8,493,000	$2,080,000	$2,080,000	$500,000	$500,000	$500,000
WBRCRC	**Regulatory Compliance**	$1,423,000	$3,000,000	$3,000,000	$3,000,000	$3,000,000	$3,000,000

Glossary for Project Profiles

Profile Element	Definition and Comments
Part A. Scope	
Original Description/Purpose:	Description of the project scope at the start of the project. What is the project? This text is usually unchanged from the original Project Action Form approved at the start of the project. During design and construction, factors such as site conditions, constructability, and value engineering may change the scope.
Rationale: Plans/Studies & Specifics	This text describes the reason for the project. Some projects have had plans, studies, analyses, or Council authorization. Some specifics from those references to justify the project approval. The text describes "why" we have started the project.
Major changes since start:	This text briefly highlights approved scope, schedule, and/or budget changes, life-to-date. This can be blank if there have been no changes.
Other info/ Coordination:	Includes information such as agency coordination, grant funding, constraints or requirements on the project delivery.
Part B. Schedule	
Initial mention:	When this project was first mentioned (Project Action Form, memo, white paper, master plans).
Initial planned comp:	This was the estimated completion date when the project was first mentioned, or when the first project number was issued.
Current planned comp:	This is the current completion date as known in September 2018. This is the date for end of project as shown in the Gantt chart. This is the project planned completion which is a few months after construction phase is complete. Closeout phase, for some projects can take much longer due to interagency billing or for other reasons. Closeout phase does not include warranty period. Projects can be completed before the planned completion date.
Part C. Cost Plan	
Initial total cost est:	The initial cost estimate is the same as the Original Cost Estimate in the Budget document for major projects. For non-major projects, the initial cost estimate occurs when the project is initiated or in a Basis of Design Report, initial Memorandum of Understanding, or in other significant documents.
FY 17-18 plan on 10/2017:	This is the planned expenditure as of October 2017.
FY 17-18 plan on 5/2018:	This is the planned expenditure as of May 2018.
Overall rate impact %:	Calculated % for CIP. Formula: Project total/$17,000,000. In previous CIPARs, the formula was Project total/$14,000,000.
Debt service, FY 18-19 est:	Estimated annual debt service for project. Calculation by CIP Planning based on funding 70% of the project, 25-year term at 5%. In previous CIPARs, the funding was at 80% of the project, 25-year term at 5%. Debt service is $0 if the project was cash financed instead of bonds.

Profile Element	Definition and Comments
Lifecycle cost est:	Each project is classified as one of 3 categories: Likely increase, Likely decrease, or No material change. Likely increase means the asset's operations and maintenance costs will likely increase. This is the case when it is a new asset such as a new building. Likely decrease means the asset's operations and maintenance costs will likely decrease (e.g., more efficient motors, abandoned mains). No material change is often when the asset has just been replaced or some aspects of operations and maintenance have gone up while others have gone down.
Part D. Identification	
SAP #:	SAP capital project number for the project.
Program:	City budget program assignment for the project.
Subprogram:	Water subprogram category assignment for the project.
Nearest address:	Short form of address (3353 SE Division) or the nearest intersection (SE Division & 34th Ave). Occasionally, for security reasons, the address or the map is ambiguous.
Part E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)	
Project total (actual + all FY plans)	Sum of project total expended to date and also all planned costs from FY 2018-19 onwards. Project contingency is included in the phase estimates.
Past FY Actual (life to 6/30/2018)	Project total actual expenses from the start of the project until June 30, 2018. The actual for FY 2017-18 is included in this figure. The sum amount in this column has been rounded up.
FY 18-19 (FY0 Plan):	Project plan for FY 2018-19 as known in September 2018 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 19-20 (FY1 Plan):	Project plan for FY 2019-20 as known in September 2018 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 20-21 (FY2 Plan):	Project plan for FY 2020-21 as known in September 2018 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 21-22 (FY3 Plan):	Project plan for FY 2021-22 as known in September 2018 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 22-23 (FY4 Plan):	Plan for FY 2022-23 as known in September 2018 when we collect data for this annual report. Project contingency is included in the phase estimates.
FY 23-24 (FY5 Plan):	Plan for FY 2023-24 as known in September 2018 when we collect data for this annual report. Project contingency is included in the phase estimates.
All following FY Plans:	Sum of FY 2024-25 and FYs further out as known in September 2018 when we collect data for this annual report. Project contingency is included in the phase estimates.

Acronyms and Abbreviations Used in Project Profiles

AMP	asset management plan
AWWA	American Water Works Association
BDR	Basis of Design Report
BES	[Portland] Bureau of Environmental Services
BOM	[Portland] Bureau of Maintenance
BTS	[Portland] Bureau of Technology Services
CADD	Computer Aided Drafting and Design
CI	cast iron
CLEM	Consequence and Likelihood Evaluation Matrix
DI	ductile iron
DSMP	Distribution System Master Plan
EPA	U.S. Environmental Protection Agency
GIS	geographic information system
GW	groundwater
HDPE	high-density polyethylene
HGL	hydraulic grade line
kV	kilovolt
LAP	Likelihood Assessment Process
LEED	Leadership in Energy & Environmental Design
LID	local improvement district
LT2	Long Term 2 Enhanced Surface Water Treatment Rule
MG	million gallons
MHz	megahertz
NTP	Notice to Proceed
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OHA	Oregon Health Authority
OPS	Operations
ORS	Oregon Revised Statute
OWAM	Oracle work order management
PBOT	Portland Bureau of Transportation
PCR	Project Concept Report
PGE	Portland General Electric
PS	pump station
PUD	public or people's utility district
PVR	Project Validation Report
PWB	Portland Water Bureau
ROW	right of way
RTU	remote telemetry unit
SCADA	system control and data acquisition
SIP	Safety Investment Program
TVWD	Tualatin Valley Water District
UIC	underground injection control
UPRR	Union Pacific Railroad
USGS	U.S. Geological Survey
VOIP	voice-over Internet protocol
VSA	Vernon-Sabin-Alameda sewer project
VSP	vitrified sewer pipe
WL	water line
WO	water outage

Major Project Profiles

Program- Water Program	SAP	Project	Total	Phase	Page
Customer Service - Customer Services	W02178	Cayenta Upgrade	$770,000	060 Complete	20
Distribution - Distribution Mains	W01547	Sellwood Bridge	$810,000	060 Complete	22
Distribution - Distribution Mains	W01590	Willamette River Pipe Crossing	$88,070,000	030 Design	24
Distribution - Distribution Mains	W01682	Cornell Road Services - Macleay Park	$1,490,000	055 Closeout Warranty	26
Distribution - Distribution Mains	W01842	N Jantzen Ave west of Pavilion	$1,380,000	030 Design	28
Distribution - Distribution Mains	W01880	SW Vista Ave from Spring St to Laurel St	$1,010,000	055 Closeout Warranty	30
Distribution - Distribution Mains	W01924	Outer Powell Transportation Safety	$3,250,000	030 Design	32
Distribution - Distribution Mains	W02004	Penridge Mains	$2,530,000	030 Design	34
Distribution - Distribution Mains	W02005	Willamette Blvd Bridge Main Replacement	$4,500,000	030 Design	36
Distribution - Distribution Mains	W02073	SW Boones Ferry Rd at SW Arnold St Bridge	$560,000	030 Design	38
Distribution - Distribution Mains	W02077	SE 20th Ave Oak St north of SE Pine St	$400,000	055 Closeout Warranty	40
Distribution - Distribution Mains	W02100	Humboldt Sewer Repair	$280,000	055 Closeout Warranty	42
Distribution - Distribution Mains	W02105	NE 49th and Roselawn Bundle	$920,000	030 Design	44
Distribution - Distribution Mains	W02107	Fulton Pump Mains Replacement	$5,080,000	030 Design	46
Distribution - Distribution Mains	W02115	NE 47th Ave and Columbia Blvd LID	$1,400,000	030 Design	48
Distribution - Distribution Mains	W02134	Columbia Slough Outfall 104b	$940,000	040 Construction	50
Distribution - Distribution Mains	W02192	NE Wheeler Basin Relocations	$820,000	040 Construction	52
Distribution - Distribution Mains	W02237	Sunnyside North Reconstruction	$1,080,000	030 Design	54
Distribution - Distribution Mains	W02292	IA - SW Capitol Hwy fr Garden Home Rd S	$2,310,000	030 Design	56
Distribution - Distribution Mains	W02303	SE Holgate Blvd I-205 Bridge Main Rehab	$530,000	030 Design	58
Distribution - Pump Stations Tanks	W01358	Fulton Pump Station Improvements	$18,640,000	055 Closeout Warranty	60
Distribution - Pump Stations Tanks	W01446	Greenleaf Pump Station	$2,750,000	040 Construction	62
Distribution - Pump Stations Tanks	W01757	Tabor PS Improvements	$510,000	055 Closeout Warranty	64
Distribution - Pump Stations Tanks	W01848	Council Crest Tank Roof Replacement	$2,090,000	040 Construction	66
Distribution - Pump Stations Tanks	W02318	Wash Park PS 2 Transformer Replacement	$1,000,000	030 Design	68
Regulatory Compliance - Water Quality Reg Compliance	W01836	Water Quality Lab Remodel	$380,000	060 Complete	70
Supply - Bull Run Watershed	W01874	Road 10R MP 28.77 - 31.85	$2,110,000	030 Design	72
Supply - Bull Run Watershed	W01875	Road 10H MP 10.95 - 12.56	$1,310,000	040 Construction	74
Supply - Bull Run Watershed	W02001	Dam 1 Needle Valve Replacement	$3,840,000	030 Design	76
Supply - Bull Run Watershed	W02003	Headworks Septic System Replacement	$720,000	040 Construction	78
Supply - Bull Run Watershed	W02021	Microwave Communications System	$1,660,000	040 Construction	80
Supply - Groundwater	W01371	Groundwater Electrical Supply Improvements	$1,420,000	040 Construction	82
Supply - Groundwater	W02106	Vivian Groundwater Improvements - cancelled	$0	059 Cancelled	84
Support - Bureau Support	W02239	Mt. Tabor Interpretive Project	$570,000	030 Design	86
Transmission & Terminal Storage - Conduits Transmission	W01489	Rockwood PUD Meter Vault	$630,000	030 Design	88
Transmission & Terminal Storage - Conduits Transmission	W02006	Gresham Conduit 2 Trestle Upgrades	$1,300,000	030 Design	90
Transmission & Terminal Storage - Conduits Transmission	W02057	Conduit 3 Internal Inspection	$1,760,000	060 Complete	92
Transmission & Terminal Storage - Conduits Transmission	W02104	Sandy River Crossing Outfall - cancelled	$12,000	059 Cancelled	94
Transmission & Terminal Storage - Conduits Transmission	W02209	Conduit 2 Internal Inspection	$1,790,000	040 Construction	96

Program- Water Program	SAP	Project	Total	Phase	Page
Transmission & Terminal Storage - Terminal Reservoirs	W01402	Washington Park Reservoir 3	$205,000,000	040 Construction	98
Transmission & Terminal Storage - Terminal Reservoirs	W01524	Tabor Reservoir Adjustments	$6,860,000	055 Closeout Warranty	100
Treatment - Treatment	W02002	Chlorine Scrubber Replacement - cancelled	$71,000	059 Cancelled	102
Treatment - Treatment	W02190	Corrosion Control Improvements	$19,920,000	030 Design	104
Treatment - Treatment	W02229	Bull Run Filtration	$500,000,000	020 Planning	106

Cayenta Upgrade

A. Scope	
Original Description / Purpose:	This project will upgrade Cayenta Utilities. The project also includes improved functionality within the software and customer self-service website for customers as well as upgrading to Windows Server 2012 R2.
Rationale: Plans/Studies & Specifics	Moving to Oracle version 12c will allow us to continue to be supported without an additional surcharge of 22%. We also need to be Windows 10 compliant, which is not possible in our current version.
Major changes since start:	Aug 2017: contracting delay and cost will shift to FY17-18.
Other info / Coordination:	

B. Schedule	
Initial mention:	February 2017
Initial planned comp:	February 2018
Current planned comp:	3/5/2018

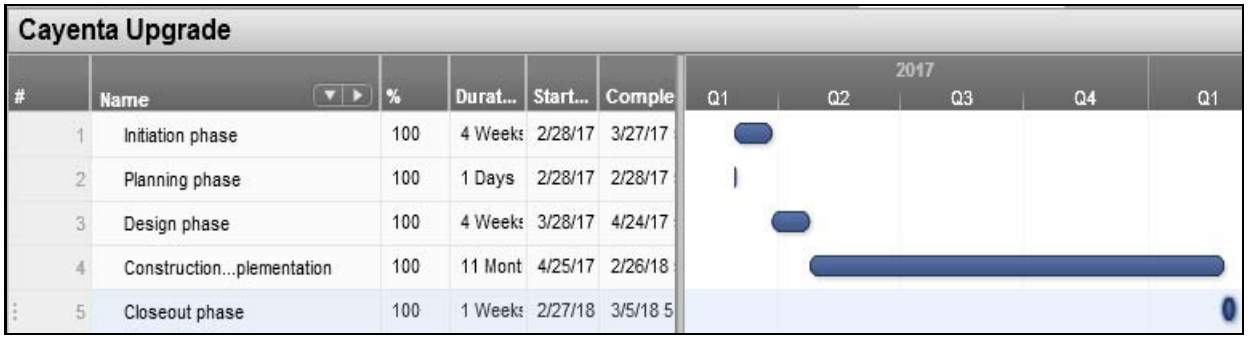
C. Cost Plan	
Initial total cost est:	$892,000
FY 17-18 plan on 10/2017:	$318,000
FY 17-18 plan on 5/2018:	$769,000
Overall rate impact %:	0.045
Debt service, FY 17-18 est:	$36,422
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02178
Program:	Customer Service
Subprogram:	Customer Services
Nearest Address:	Citywide

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$772,885	$772,885	$0	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$770,000	$772,885	$0	$0	$0	$0	$0	$0	$0

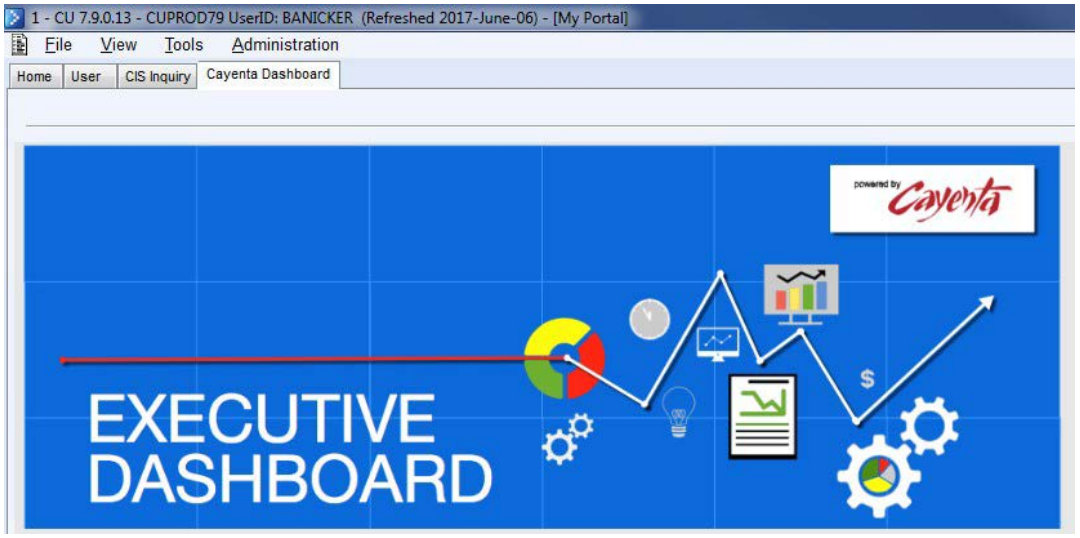
No Map for This Project



060 Complete

Major Project Completed

W02178 Cayenta Upgrade



Sellwood Bridge

A. Scope	
Original Description / Purpose:	This project was constructed in two parts to accommodate bridge work schedule. Part 1 work installed 825 feet of 16 inch ductile iron pipe, 2 hydrants, and 1 service. Part 2 work installed 1,071 feet of 36 inch steel pipe, 65 feet of 30 inch steel pipe, one 36 inch valve, one 30 inch valve, one 30 inch ultrasonic flow meter in a dedicated vault, and 65 feet of 54 inch steel casing where the pipe passes through a railroad right of way. Cathodic protection was also added to the steel pipe. The work is part of Multnomah County's Sellwood Bridge replacement project. Added irrigation service and relocation of domestic and fire service.
Rationale: Plans/Studies & Specifics	Multnomah County/PBOT request.
Major changes since start:	April 2013: scope, cost and schedule added due to county request to relocate additional mains and review various plans. Mar 2014: contractor delay caused cost increase and longer schedule. Sept 2014: delay and cost increase to match county schedule. June 2015: Reduced closeout phase and increased construction phase time while waiting for PBOT IGA. March 2016: additional scope requested by County added cost and delay. Sept 2017: project extending into FY17-18 for easement and closeout work.
Other info / Coordination:	Multnomah County reimbursed PWB for the work and completed $5M of water relocation at their cost. The total cost for water was $6M.

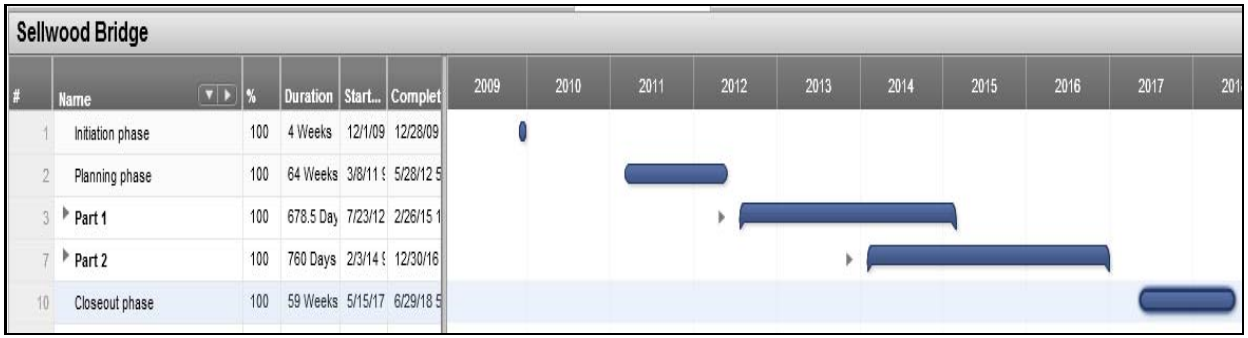
B. Schedule	
Initial mention:	12/1/2009
Initial planned comp:	3/16/2015
Current planned comp:	6/29/2018

C. Cost Plan	
Initial total cost est:	$410,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$30,000
Overall rate impact %:	0.048
Debt service, FY 17-18 est:	$38,314
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01547
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Macadam Ave & Sellwood Bridge

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$19,577	$19,577		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$599,205	$599,205		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$185,008	$185,008		$0	$0	$0	$0	$0	$0	$0
Other	$11,003	$11,003		$0	$0	$0	$0	$0	$0	$0
Sum	$810,000	$814,793		$0	$0	$0	$0	$0	$0	$0



060 Complete

Major Project Completed

W01547 Sellwood Bridge

Willamette River Pipe Crossing

A. Scope	
Original Description / Purpose:	This project will build a large pipe crossing of the Willamette River. Existing pipelines across the Willamette River do not meet current seismic code. This project will add a new pipeline built to the current seismic code and will provide a reliable transmission link between Powell Butte and the service areas west of the Willamette River, including downtown and the storage reservoirs at Washington Park.
Rationale: Plans/Studies & Specifics	The project reduces the risk of a major water supply outage in the service areas west of the Willamette River, including downtown and the storage reservoirs at Washington Park. It includes construction of a new seismically strengthened river crossing to replace the first one of potentially two Willamette River crossings, and new transmission piping on both sides of the Willamette.
Major changes since start:	2011: schedule changed to complete geotech and acquire land before design. 2012: project schedule changed to reflect funding availability and allow earlier decision on alignment. 8/14: schedule and multiyear cost plan change for advance approval of alternative procurement. Aug 2015: schedule changes due to management considerations. March 2016: schedule change due to delays in Council approval. 2/1018: procurement delay caused cost shifts. Aug 2018: higher than expected bid increased project total and delays to resolve.
Other info / Coordination:	

B. Schedule	
Initial mention:	6/1/2007
Initial planned comp:	June 2018
Current planned comp:	3/4/2021

C. Cost Plan	
Initial total cost est:	$57,000,000
FY 17-18 plan on 10/2017:	$6,600,000
FY 17-18 plan on 5/2018:	$1,278,000
Overall rate impact %:	5.181
Debt service, FY 17-18 est:	$4,165,855
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01590
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	1500 E/ SW HARBOR WAY

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$72,617	$72,617	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$8,816,693	$3,381,693	$5,385,000	$50,000	$0	$0	$0	$0	$0
Construction & Land	$73,009,868	$14,868	$0	$35,250,000	$31,635,000	$6,110,000	$0	$0	$0
Other	$6,800,000	$0	$500,000	$4,000,000	$2,000,000	$300,000	$0	$0	$0
Sum	$88,070,000	$3,469,178	$5,885,000	$38,675,000	$33,635,000	$6,410,000	$0	$0	$0

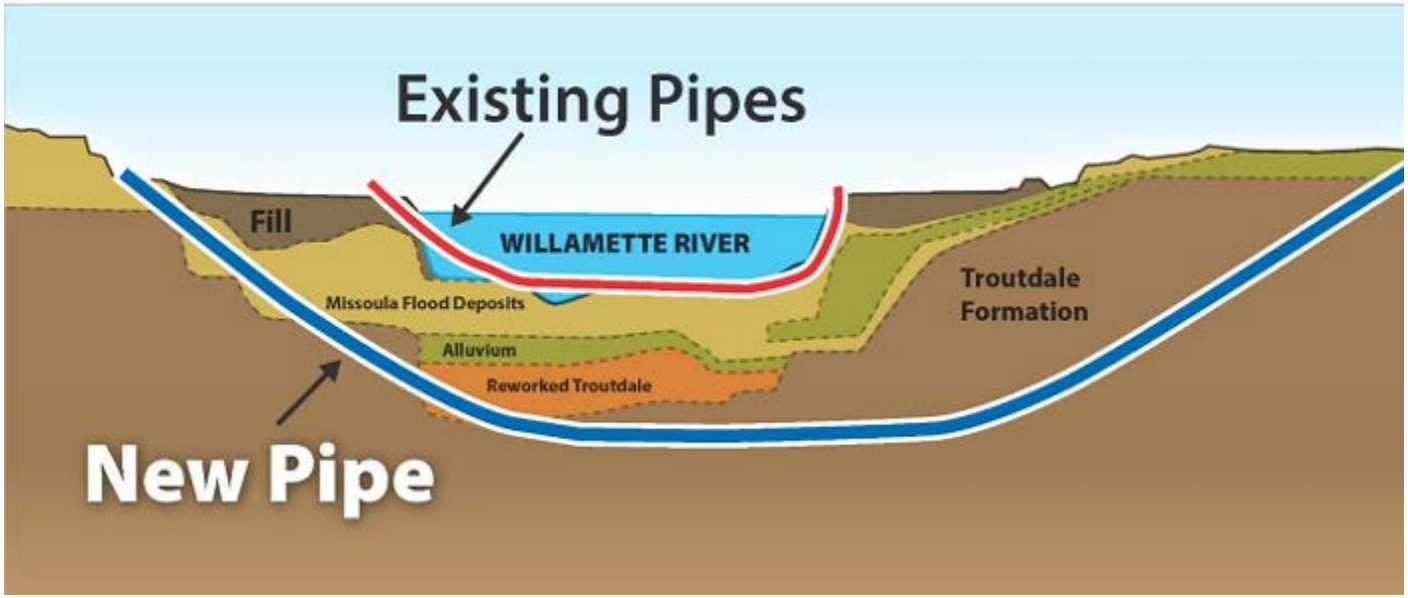
Willamette Blvd Bridge Main Replacement

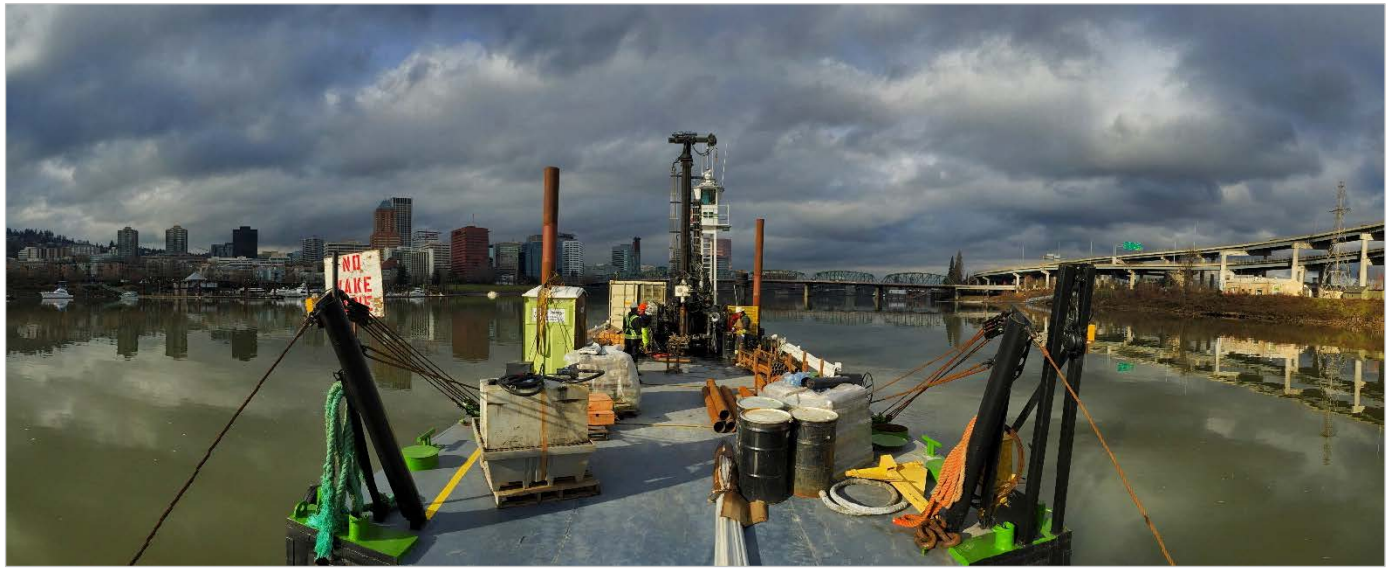
#	Name	%	Durati...	Start...	Comple
1	INITIATION PHASE	100	11.8 Mon	8/6/15 9	6/30/16
3	PLANNING PHASE	100	1680 Hou	7/1/16 9	4/20/17
4	DESIGN PHASE	52.64	42.25 Mo	3/2/17 9	5/27/20
12	CONSTRUCTION PHASE	0	16.75 Mo	5/28/20	9/8/21 5
18	CLOSEOUT PHASE	0	3.25 Mon	9/9/21 9	12/8/21

030 Design

Major Project Continuing

W01590 Willamette River Pipe Crossing





Cornell Road Services - Macleay Park

A. Scope	
Original Description / Purpose:	This project will bore approximately 7,200 feet of 3-inch HDPE main in Cornell Road from the existing 8-inch main east of Skyline Boulevard (Greenleaf 1250 pressure zone) east to the Cornell Road services. This alternative will require up to three 2x2-inch regulators to keep the Cornell Road services supplied at the current HGL of 731 feet.
Rationale: Plans/Studies & Specifics	PWB and Parks agreed to construct a water main and activate service accounts for property owners receiving water from a temporary Parks 5,000 foot water main constructed in 1931. This project will replace the temporary main.
Major changes since start:	8/14: Original design required access through private property and construction in a landslide area. Redesigned alignment increased scope, cost and time. 11/2014: Fall Budget change as a new Major project. 3/2016: delays due to workload issues. 10/2016: cost increase for permitting, traffic and additional design. 2/2017: higher bids than expected and design delay. 8/2017: cost increase and delay due to rocks breaking equipment. Feb 2018: construction delay and cost increase due to geotech risks.
Other info / Coordination:	

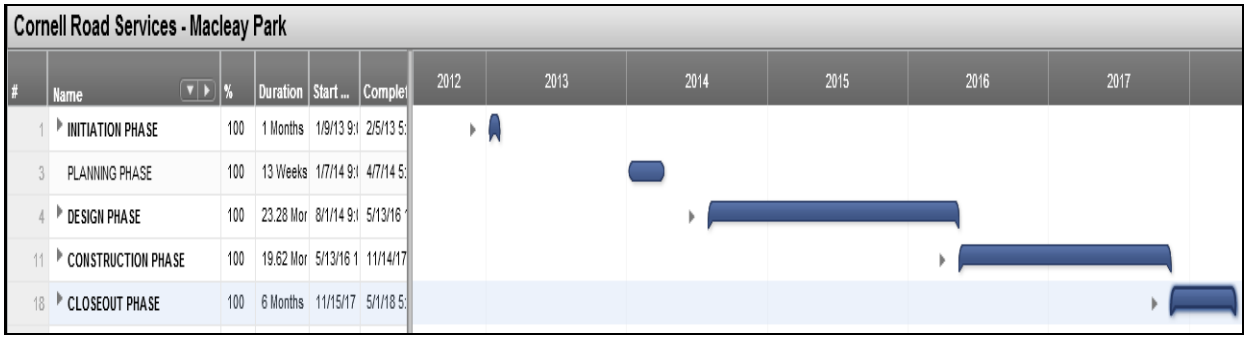
B. Schedule	
Initial mention:	January 2013
Initial planned comp:	March 2017
Current planned comp:	5/1/2018

C. Cost Plan	
Initial total cost est:	$830,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$811,000
Overall rate impact %:	0.088
Debt service, FY 17-18 est:	$70,479
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01682
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	NW Cornell Road

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$19,392	$19,392		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$382,028	$382,028		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,081,556	$1,081,556		$0	$0	$0	$0	$0	$0	$0
Other	$7,320	$7,320		$0	$0	$0	$0	$0	$0	$0
Sum	$1,490,000	$1,490,296		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01682 Cornell Road Services – Macleay Park

N Jantzen Ave west of Pavilion

A. Scope	
Original Description / Purpose:	This project will correct services without backflow devices and replace approximately 1,800 linear feet of 8 and 10-inch asbestos-concrete (transite) and PVC main with 1,722 feet of 12-inch ductile iron pipe and 6-inch asbestos-concrete pipe with 6-inch ductile iron pipe. The project will also install 5 fire hydrants and 11 services.
Rationale: Plans/Studies & Specifics	This is ranked High in the project ranking database for the following reasons: (1) as many as six nonstandard services lack complete documentation and appear to lack backflow devices, (2) the nonstandard services have leak histories and undocumented private connections are suspected (3) the asbestos-concrete main (while not affecting water quality) poses a hazard to crews making any repairs.
Major changes since start:	Nov 2014: Fall Budget change as a new Major project. Aug 2016: Technical adjustment to FY17-18 to maintain project total. Feb 2017: schedule delay due to easement and higher priority work. Sept 2017: project being replanned due to complex easement and additional scope. March 2018: further project changes due to easement.
Other info / Coordination:	Project was recommended in the Hayden Island Master Plan (2010). A majority of the system on Hayden Island is on private property. PWB will map the location of existing water services. We will also update PWB easements for access and maintenance, as needed. Construction will be required to upgrade nonstandard water services and PWB will address customer responsibilities for backflow prevention.

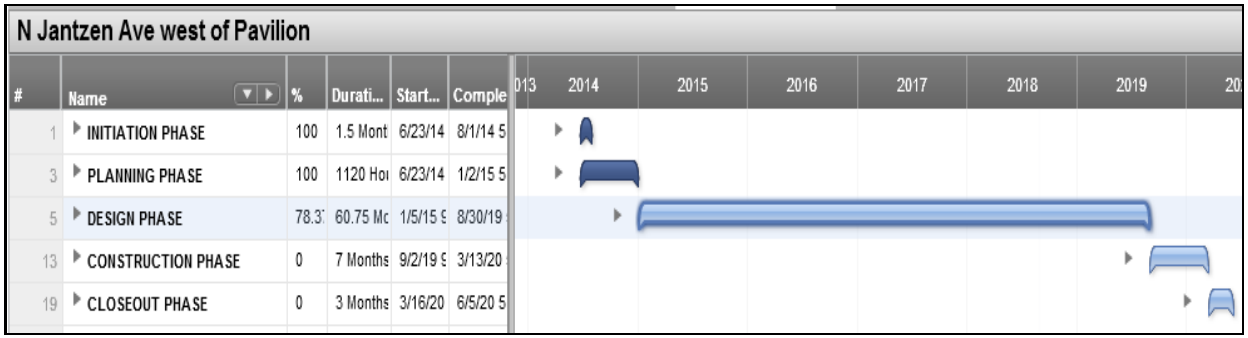
B. Schedule	
Initial mention:	June 2014
Initial planned comp:	August 2017
Current planned comp:	6/5/2020

C. Cost Plan	
Initial total cost est:	$1,283,000
FY 17-18 plan on 10/2017:	$19,000
FY 17-18 plan on 5/2018:	$18,000
Overall rate impact %:	0.081
Debt service, FY 17-18 est:	$65,276
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01842
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	N Starlight Ave & N Jantzen Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$3,621	$3,621	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$296,674	$206,674	$90,000	$0	$0	$0	$0	$0	$0
Construction & Land	$985,000	$0	$0	$985,000	$0	$0	$0	$0	$0
Other	$97,000	$0	$0	$97,000	$0	$0	$0	$0	$0
Sum	$1,380,000	$210,295	$90,000	$1,081,000	$0	$0	$0	$0	$0



030 Design

Major Project Continuing

W01842 N Jantzen Ave west of Pavilion

SW Vista Ave from Spring St to Laurel St

A. Scope	
Original Description / Purpose:	This project will install 1,078 ft of 8-inch main, 225 ft of 6-inch main, install 3 hydrants, renew 17 1-inch services, renew 1 2-inch fire service, install one 6 inch by 2 inch regulator and vault, and abandon 1042 ft of 8-inch main
Rationale: Plans/Studies & Specifics	The existing 8-inch main has had 6 recorded leaks with 4 occurring in the last 2 years. Maintenance and Construction recommends replacement. Cast iron pipe is more brittle than ductile iron pipe and therefore is more likely to break. PWB management decided to extend replacement to other sections of a similar age.
Major changes since start:	Aug 2015: Additional pipe added to scope increased cost and schedule. Now has a new status as a major project and a new initial estimate. Aug 2016: Change of connection location increased footage and time. Feb 2018: PBOT resurfacing requirements increased cost.
Other info / Coordination:	

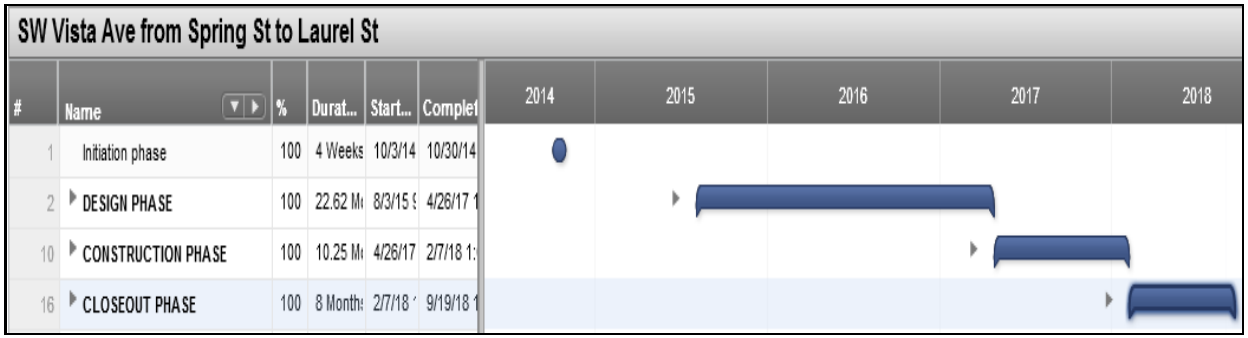
B. Schedule	
Initial mention:	October 2014
Initial planned comp:	January 2016
Current planned comp:	9/19/2018

C. Cost Plan	
Initial total cost est:	$866,000
FY 17-18 plan on 10/2017:	$766,000
FY 17-18 plan on 5/2018:	$811,000
Overall rate impact %:	0.059
Debt service, FY 17-18 est:	$47,775
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01880
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Vista Ave from Spring to Laurel

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$200,397	$200,397		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$810,155	$810,155		$0	$0	$0	$0	$0	$0	$0
Other	$1,355	$1,355		$0	$0	$0	$0	$0	$0	$0
Sum	$1,010,000	$1,011,907		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01880 SW Vista Ave from Spring St to Laurel St

Outer Powell Transportation Safety

A. Scope	
Original Description / Purpose:	The project will install about 4,200 feet of 12 inch main, 400 feet of 8 inch main and 400 feet of 6 inch main to replace the distributions system on the North and South side of Powell with one main, relocate four fire hydrants and install up to five new fire hydrants and renew 43 1-inch water service lines, seven 2-inch water service lines, one 4-inch fire line, and one 6-inch fire line.
Rationale: Plans/Studies & Specifics	ODOT is planning to widen the travel roadway and add sidewalks and bike lanes to SE Powell Blvd, which will potentially impact Conduit 3 and the existing distribution mains, water service lines and fire hydrants.
Major changes since start:	June 2016: project on hold per ODOT. Aug 2016: planning restarted. Feb 2017: ODOT request now includes design and construction estimates. March 2018: increased scope, schedule and budget per ODOT.
Other info / Coordination:	Construction of the required water system mitigation will be included in ODOT's Construction Contract. PWB will provide Construction Management for the required Contract water system mitigation work and PWB crew abandonment of water mains, water main tie-ins and meter connections. ODOT will be paying 100% of the costs for PWB Planning participation in the TAC meetings and research and review services starting Jan 29, 2015.

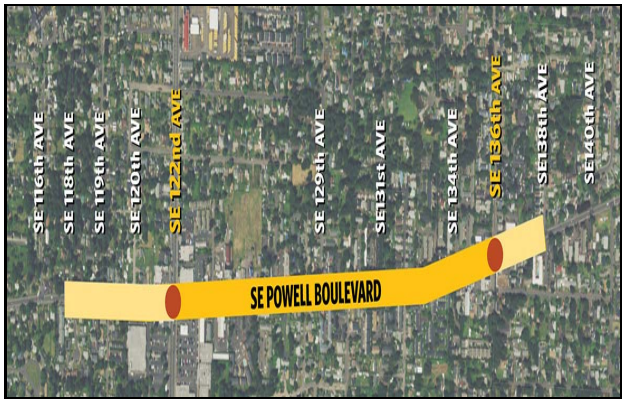
B. Schedule	
Initial mention:	February 2015
Initial planned comp:	June 2019
Current planned comp:	2/5/2021

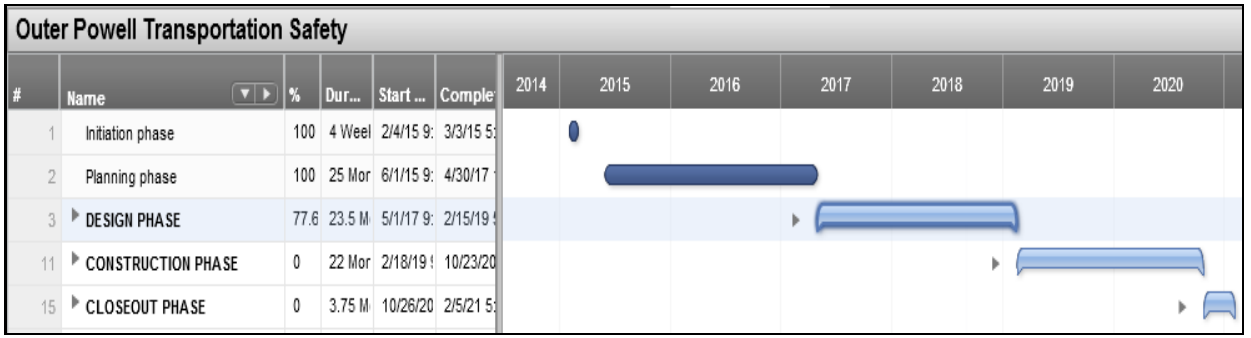
C. Cost Plan	
Initial total cost est:	$1,974,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$161,000
Overall rate impact %:	0.191
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01924
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE Powell Blvd from I-205 to SE 174th Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$10,008	$10,008	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$204,136	$174,136	$30,000	$0	$0	$0	$0	$0	$0
Construction & Land	$2,539,000	$0	$2,010,000	$474,000	$55,000	$0	$0	$0	$0
Other	$495,000	$0	$400,000	$95,000	$0	$0	$0	$0	$0
Sum	$3,250,000	$184,144	$2,440,000	$569,000	$55,000	$0	$0	$0	$0

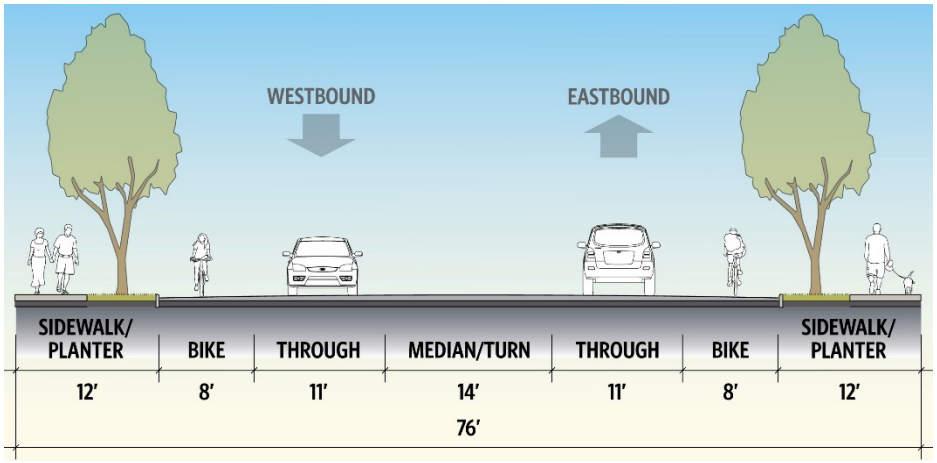




030 Design

Major Project Continuing

W01924 Outer Powell Transportation Safety



Penridge Mains

A. Scope	
Original Description / Purpose:	This project will replace approximately 8000 feet of existing main and renew 41 1-inch domestic services and install 7 hydrants.
Rationale: Plans/Studies & Specifics	The Greenleaf Pump Station and Penridge Service Area Basis of Design Report recommended several projects to facilitate taking the Penridge Tank out of service, replacing the aging Greenleaf Pump Station and improving fire flows due to undersized mains as identified in the Distribution System and Northwest Hills Master Plans. This project will replace and upsize the mains and allow the Penridge Tank to be taken out of service without further diminishing already substandard fire flows. The Greenleaf Pump Station is being replaced in a separate project.
Major changes since start:	May 2017: minor scope adjustment and delayed start caused FY cost replanning. March 2018: staffing constraints delayed project start.
Other info / Coordination:	Project must coordinate with Greenleaf Pump Station project. Cost estimate assumes road repair will be minimal. Risks affecting cost contigency include relocation of PGE power lines, storm drain conflicts and pavement restoration costs.

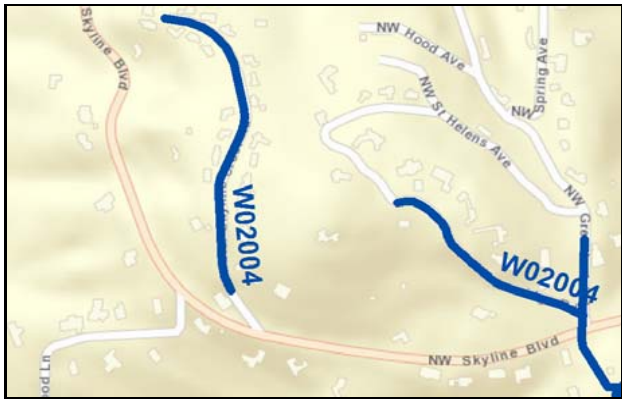
B. Schedule	
Initial mention:	April 2015
Initial planned comp:	March 2020
Current planned comp:	1/5/2021

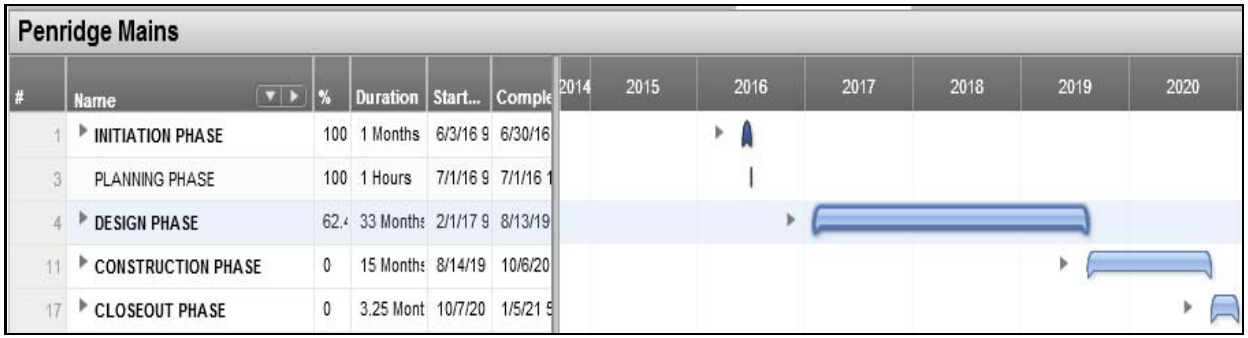
C. Cost Plan	
Initial total cost est:	$2,530,000
FY 17-18 plan on 10/2017:	$230,000
FY 17-18 plan on 5/2018:	$155,000
Overall rate impact %:	0.149
Debt service, FY 17-18 est:	$119,673
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02004
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Penridge service area

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$343,722	$138,722		$185,000	$20,000	$0	$0	$0	$0	$0
Construction & Land	$1,449,662	$25,662		$0	$1,110,000	$314,000	$0	$0	$0	$0
Other	$736,000	$0		$50,000	$500,000	$186,000	$0	$0	$0	$0
Sum	$2,530,000	$164,384		$235,000	$1,630,000	$500,000	$0	$0	$0	$0





030 Design

Major Project Continuing

W02004 Penridge Mains

Willamette Blvd Bridge Main Replacement

A. Scope	
Original Description / Purpose:	This project will install 950 feet of 24-inch pipe in 42-inch casing, plus an additional 200 feet of un-cased 24-inch pipe to connect to the existing system. Abandon the existing 20 inch pipeline crossing the Willamette Boulevard Bridge
Rationale: Plans/Studies & Specifics	The 20-inch pipeline on the N Willamette Boulevard Bridge is the primary supply to approximately 5,000 services in North Portland and to the St Johns pipeline crossing of the Willamette River. Both the existing 20-inch pipeline on the bridge and the bridge are in poor condition. The pipeline is vulnerable to failure due to condition and also due to a seismic event. Because of the high risk of failure, this project has a positive cost/benefit value of 1.5.
Major changes since start:	May 2017: replanned due to delayed project start.
Other info / Coordination:	Project contingency is $450,000 higher than planning level contingency of 50%. Higher contingency is due to risk involved with obtaining railroad permits, obtaining a land use review permit, designing to avoid other major utilities in the project area and known soil contamination.

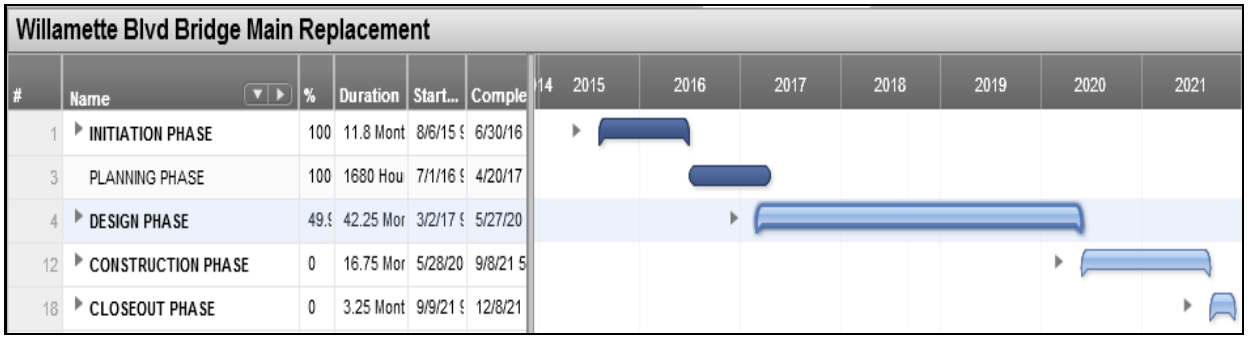
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	December 2020
Current planned comp:	12/8/2021

C. Cost Plan	
Initial total cost est:	$4,500,000
FY 17-18 plan on 10/2017:	$860,000
FY 17-18 plan on 5/2018:	$120,000
Overall rate impact %:	0.265
Debt service, FY 17-18 est:	$212,857
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02005
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	N Willamette Blvd between Alma Ave and Carey Blvd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,008,094	$142,094		$455,000	$411,000	$0	$0	$0	$0	$0
Construction & Land	$1,775,000	$0		$0	$10,000	$1,480,000	$285,000	$0	$0	$0
Other	$1,713,000	$0		$260,000	$203,000	$1,073,000	$177,000	$0	$0	$0
Sum	$4,500,000	$142,094		$715,000	$624,000	$2,553,000	$462,000	$0	$0	$0



030 Design

Major Project Continuing

W02005 Willamette Blvd Bridge Main Replacement

SW Boones Ferry Rd at SW Arnold St Bridge

A. Scope	
Original Description / Purpose:	This project will abandon two parallel 6-inch cast iron water mains in SW Boones Ferry Rd between SW Comus Ct and SW Arnold St (about 800 feet). Replace with one 460-foot-long 8-inch ductile iron water main, attaching the 8-inch pipe to a 126-foot-long new bridge structure. Also, renew two water service lines.
Rationale: Plans/Studies & Specifics	BES will be removing the existing roadway bed crossing the existing culvert structure under the roadway, in order to construct a 126-foot-long bridge structure in SW Boones Ferry Rd north of SW Arnold St. The two existing parallel 6-inch water mains in SW Boones Ferry Rd will also be impacted by this roadway removal.
Major changes since start:	Feb 2017: schedule and cost increase due to BES and contaminated media. Sept 2017: replanning and minor FY cost shift to match BES schedule. Feb 2018: schedule delay and budget shifts caused by BES delays.
Other info / Coordination:	BES's consultant will design and bid the water mitigation work. BES will share costs on this project. The Fire Bureau has authorized cutting and plugging the two 6-inch water mains, and leaving the area with an anticipated diminished fire flow of 500 gpm for a maximum duration of nine months with the understanding that the fire hydrants at certain locations will maintain their nominal fire flow capacity.

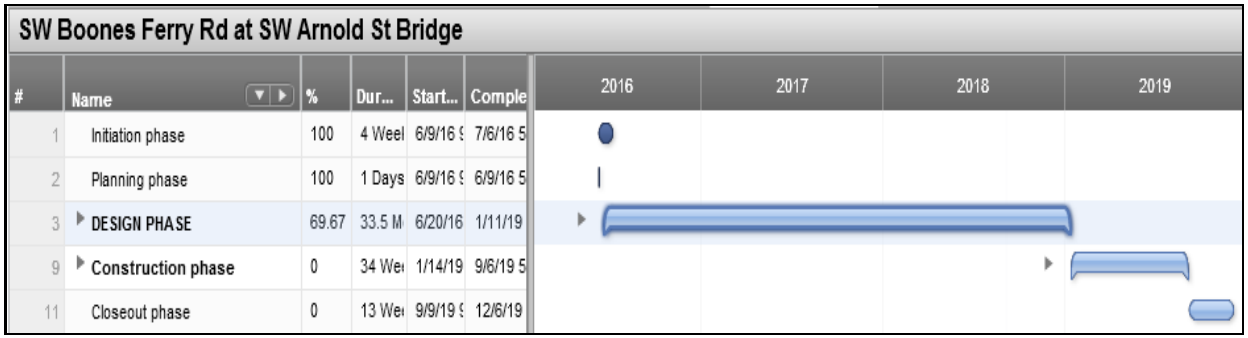
B. Schedule	
Initial mention:	June 2016
Initial planned comp:	February 2018
Current planned comp:	12/6/2019

C. Cost Plan	
Initial total cost est:	$560,000
FY 17-18 plan on 10/2017:	$356,000
FY 17-18 plan on 5/2018:	$78,000
Overall rate impact %:	0.033
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02073
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SW Boones Ferry Rd and Arnold St Bridge

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$67,490	$62,490	$5,000	$0	$0	$0	$0	$0	$0
Construction & Land	$364,000	$0	$172,000	$192,000	$0	$0	$0	$0	$0
Other	$130,000	$0	$46,000	$84,000	$0	$0	$0	$0	$0
Sum	$560,000	$62,490	$221,000	$276,000	$0	$0	$0	$0	$0



030 Design

Major Project Continuing

W02073 SW Boones Ferry Rd at SW Arnold St Bridge

SE 20th Ave Oak St north of SE Pine St

A. Scope	
Original Description / Purpose:	This project will install 207 feet of 16-inch ductile iron (DI) pipe, 267 feet of 8-inch DI pipe, and abandon 441 feet of 8-inch and 93 feet of 16-inch CI water main. Also, renew four water service lines, transfer three water services, renew one fire hydrant, and install a 20-inch butterfly valve.
Rationale: Plans/Studies & Specifics	BES will be installing a 24-inch sanitary sewer line 4 feet away from the existing 8-inch water main in SE 20th Ave, in violation of OAR 333/340. They are trying to stay away from the existing 20-inch water main located on the west side of SE 20th Ave, as well as the existing sanitary sewer line, which is also located on the west side of SE 20th Ave, and is supported by a wooden trestle.
Major changes since start:	Feb 2017: scope change to improve design. Sept 2017: replanning to match BES.
Other info / Coordination:	FY18-19 Other $ amount is for cost transfer from BES for construction. The water main work will be included in the BES contract. Project contingency not used. Project total cost less than initial estimate.

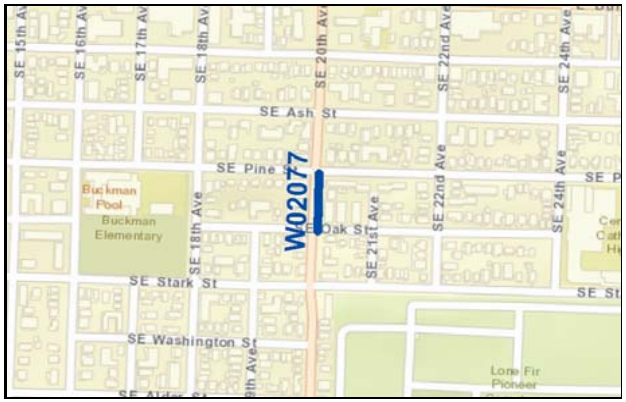
B. Schedule	
Initial mention:	June 2016
Initial planned comp:	March 2018
Current planned comp:	5/22/2018

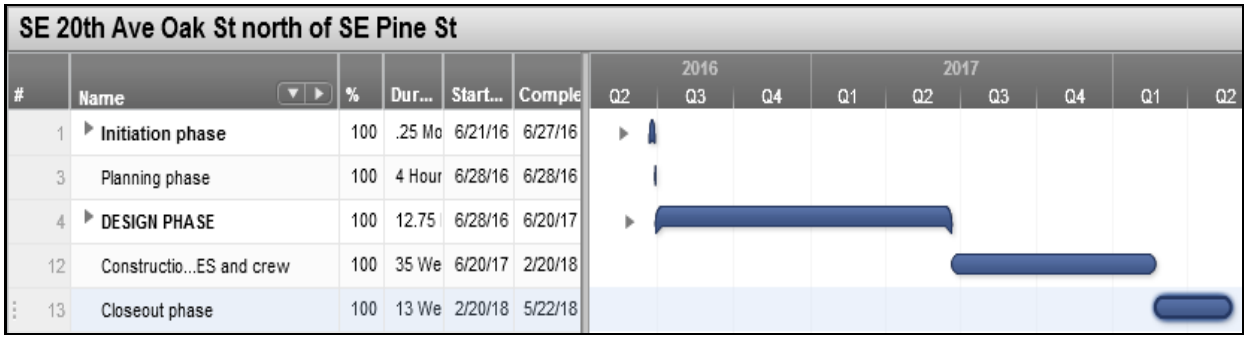
C. Cost Plan	
Initial total cost est:	$454,000
FY 17-18 plan on 10/2017:	$330,000
FY 17-18 plan on 5/2018:	$395,000
Overall rate impact %:	0.024
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02077
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE 20th Ave from Oak St to NNL Pine St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$102,485	$102,485	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$132,962	$132,962	$0	$0	$0	$0	$0	$0	$0
Other	$161,859	$859	$161,000	$0	$0	$0	$0	$0	$0
Sum	$400,000	$236,306	$161,000	$0	$0	$0	$0	$0	$0





055 Closeout Warranty

Major Project Completed

W02077 SE 20th Ave Oak St north of SE Pine St

Humboldt Sewer Repair

A. Scope	
Original Description / Purpose:	This project will relocate approximately 145 feet of 8-inch pipe, 55 feet of 6-inch pipe, renew a 1-inch service and connect one fire hydrant. Install temporary water service lines and renew the permanent water service lines for nine water service lines for spot repairs. Run temporary water service lines and renew for 17 lateral conflicts. (Revised March 2017)
Rationale: Plans/Studies & Specifics	BES will install a manhole that conflicts with the 8-inch pipe. They will also make spot repairs crossing water service lines which require temporary water service installations and renewals.
Major changes since start:	Feb 2017: design delay to PBOT conditions. Aug 2017: design delay to meet PBOT requirements; costs reduced. March 2018: savings as alignment was reduced.
Other info / Coordination:	FY18-19 Other $ amount is for cost transfer from BES for construction.

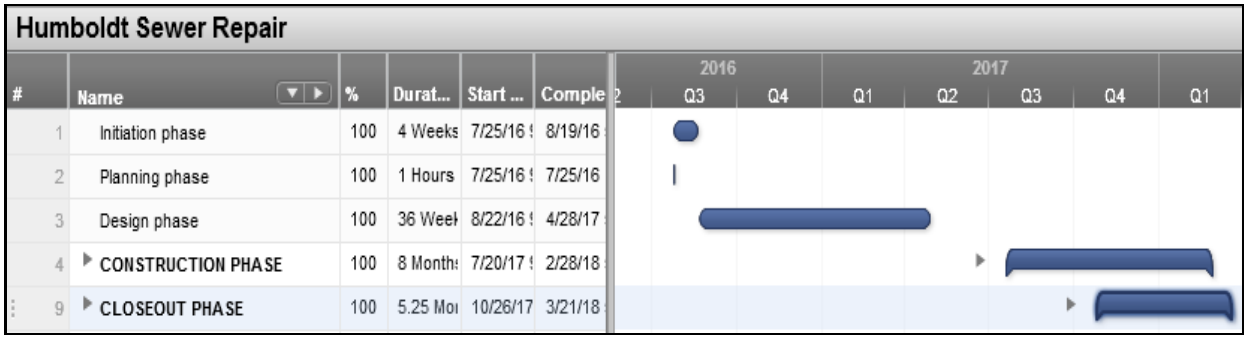
B. Schedule	
Initial mention:	July 2016
Initial planned comp:	September 2017
Current planned comp:	3/21/2018

C. Cost Plan	
Initial total cost est:	$487,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$114,000
Overall rate impact %:	0.016
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02100
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$66,910	$66,910		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$102,069	$102,069		$0	$0	$0	$0	$0	$0	$0
Other	$115,993	$993		$115,000	$0	$0	$0	$0	$0	$0
Sum	$280,000	$169,972		$115,000	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W02100 Humboldt Sewer Repair

NE 49th and Roselawn Bundle

A. Scope	
Original Description / Purpose:	This project will install 2,970 ft of 6-inch ductile iron (DI) main, install 125 ft of 4-inch DI main, renew 82 services, and install 4 hydrants.
Rationale: Plans/Studies & Specifics	This group of 2 and 4-inch distribution mains includes 4-inch cast-iron mains with eight vertical breaks, and 2-inch galvanized mains with five leaks.
Major changes since start:	Sept 2017: project being replanned to match available staffing. Jan 2018: project changing staffing. Feb 2018: project replanned due to staffing; no change in total.
Other info / Coordination:	These mains exceed the standards and requirements for work that can be performed by PWB crews and have been grouped together for a contract to maximize efficiency in design, contract management, and construction. Construction cannot begin prior to 2/21/2020 due to a pavement moratorium at the NE Killingsworth Street and 49th Avenue tie-in. The project total includes a 30% contingency.

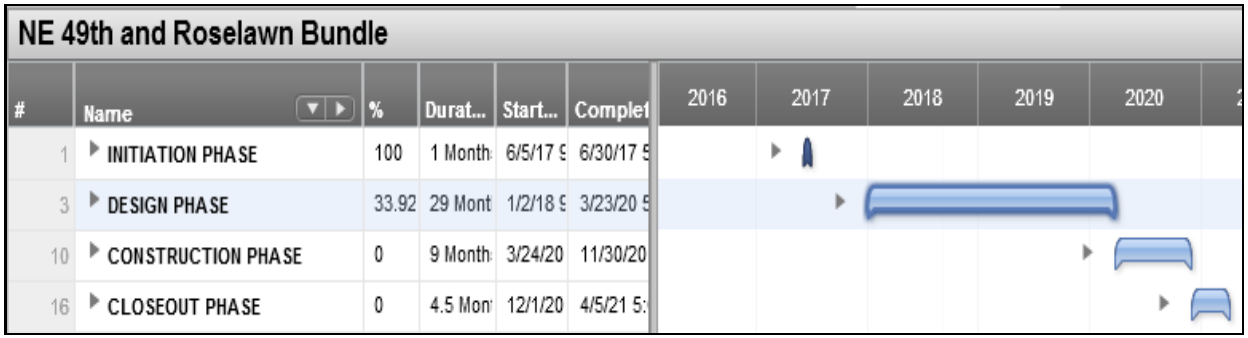
B. Schedule	
Initial mention:	August 2016
Initial planned comp:	September 2020
Current planned comp:	4/5/2021

C. Cost Plan	
Initial total cost est:	$916,000
FY 17-18 plan on 10/2017:	$127,000
FY 17-18 plan on 5/2018:	$68,000
Overall rate impact %:	0.054
Debt service, FY 17-18 est:	$43,518
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02105
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$121,356	$44,356		$42,000	$35,000	$0	$0	$0	$0	$0
Construction & Land	$574,000	$0		$0	$53,000	$521,000	$0	$0	$0	$0
Other	$220,000	$0		$30,000	$42,000	$148,000	$0	$0	$0	$0
Sum	$920,000	$44,356		$72,000	$130,000	$669,000	$0	$0	$0	$0



030 Design

Major Project Continuing

W02105 NE 49th and Roselawn Bundle

Fulton Pump Mains Replacement

A. Scope	
Original Description / Purpose:	This project will install approximately 2,890 feet of new 20-inch pump main and 450 feet of new 24-inch pump main. The 24-inch pump main includes 300 feet bored under the I-5 freeway and approximately 150 feet bored under SW Barbur Blvd. The project will also include abandoning approximately 3,180 feet of 10-inch pump main and 3,180 feet of 12-inch pump main between the I-5 right-of-way and the Burlingame Tank Site.
Rationale: Plans/Studies & Specifics	Several sections of the Fulton Pump Main System were determined by CLEM analysis to be at high risk to the bureau. The crossing of the I-5 freeway is an uncased 16-inch steel pipe, which would cause severe damage to I-5 and surrounding neighborhoods if it breaks. There have been 15 leaks and breaks since 1965 on the section of mains that will be replaced. Preliminary calculations show that the reduction in risk cost to the bureau by abandonment and replacement of the high-risk segments of the Fulton Pump Main system will result in a benefit/cost ratio above 1.
Major changes since start:	Sept 2017: being replanned due to staffing constraints. Nov 2017: new staffing project restarted. Aug 2018: durations replanned to match existing street moratorium.
Other info / Coordination:	A 50% contingency was applied to the design, construction management, and construction estimates for this project. It is assumed that a consultant will be used for the design of this project. A paving moratorium exists in SW Chestnut Street, which will carry a large segment of the new pump main for this project. The moratorium will expire in the summer of 2021. Construction of the parts of this project in SW Chestnut Street must wait till then.

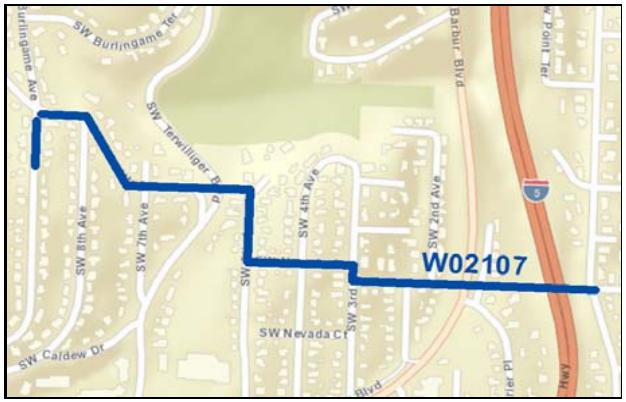
B. Schedule	
Initial mention:	August 2016
Initial planned comp:	December 2022
Current planned comp:	11/3/2022

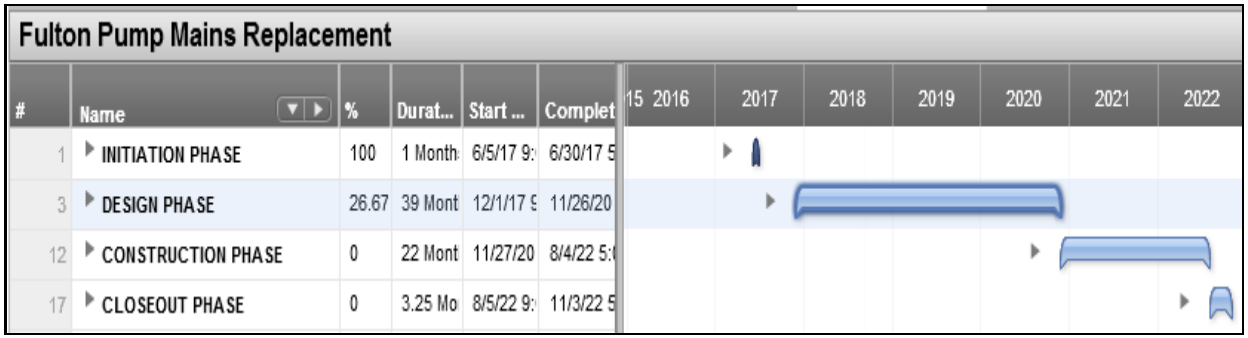
C. Cost Plan	
Initial total cost est:	$5,079,000
FY 17-18 plan on 10/2017:	$60,000
FY 17-18 plan on 5/2018:	$60,000
Overall rate impact %:	0.299
Debt service, FY 17-18 est:	$240,292
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02107
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various mains

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$953,347	$68,347		$415,000	$410,000	$60,000	$0	$0	$0	$0
Construction & Land	$2,548,000	$0		$0	$0	$114,000	$2,364,000	$70,000	$0	$0
Other	$1,579,000	$0		$133,000	$150,000	$85,000	$1,176,000	$35,000	$0	$0
Sum	$5,080,000	$68,347		$548,000	$560,000	$259,000	$3,540,000	$105,000	$0	$0





030 Design Major Project Continuing

W02107 Fulton Pump Mains Replacement

NE 47th Ave and Columbia Blvd LID

A. Scope	
Original Description / Purpose:	This project will relocate 2,035 feet of 12-inch water main, relocate three fire hydrants, install four new fire hydrants, lower and sleeve 12 1-inch water service lines under proposed stormwater planters, renew nine 1-inch and one 2-inch water service lines. Approximately 110' of the relocated pipe will need to be installed in a casing underneath the Columbia Slough.
Rationale: Plans/Studies & Specifics	PBOT will be completely rebuilding the right-of-way and installing Stormwater planters overtop of the existing 12-inch cast iron water main. Although the 12-inch pipe is a straight run of pipe, the impacted sections have connections for 12 water service lines.
Major changes since start:	Feb 2017: redesign and reduced cost. Feb 2018: PDOT schedule change, total unchanged. Aug 2018: schedule changes to match PBOT.
Other info / Coordination:	This construction work will be included in PBOT's LID Contract. PBOT has designed the new travel roadway to be 12-inches of reinforced concrete, and as a result has requested that PWB consider: 1) installing the new main under the proposed 10-foot wide shared bike/pedestrian path on the east side of NE 47th Ave, and 2) installing casing at random locations to the west side of the travel roadway in anticipation of future water service needs.

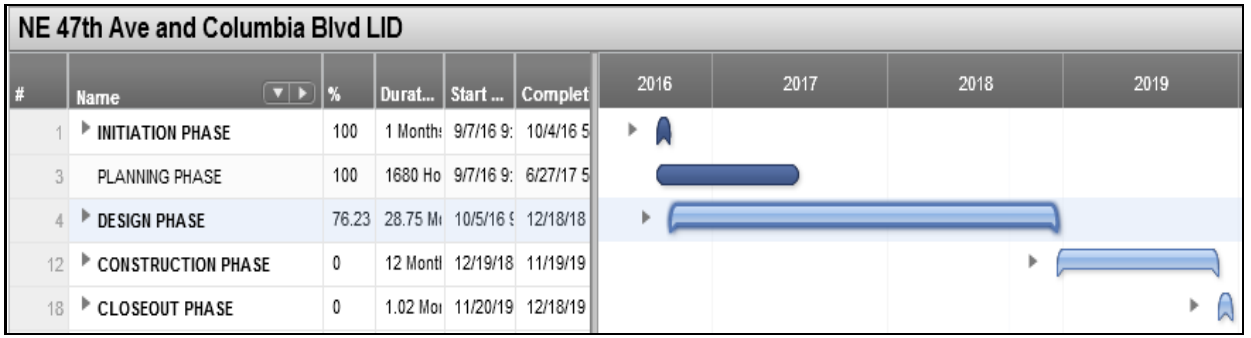
B. Schedule	
Initial mention:	September 2016
Initial planned comp:	March 2018
Current planned comp:	12/18/2019

C. Cost Plan	
Initial total cost est:	$1,400,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$44,000
Overall rate impact %:	0.082
Debt service, FY 17-18 est:	$66,222
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02115
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	NE 47th Ave from north of NE Columbia Blvd to south of NE Cornfoot Rd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$89,410	$77,410		$12,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,307,000	$0		$727,000	$580,000	$0	$0	$0	$0	$0
Other	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$1,400,000	$77,410		$739,000	$580,000	$0	$0	$0	$0	$0



030 Design Major Project Continuing

W02115 NE 47th Ave & Columbia Blvd LID

Columbia Slough Outfall 104b

A. Scope	
Original Description / Purpose:	This project will install a total of 845 feet of new ductile iron (DI) main. This includes replacing approximately 20 feet of 6-inch cast iron (CI) main with new 6-inch DI main, replacing approximately 205 feet of 8-inch CI main with new 8-inch DI main, and replacing approximately 620 feet of 10-inch CI main with new 10-inch DI main. This project will renew two (2) 1-inch services, transfer zero (0) services, and relocate one (1) hydrant.
Rationale: Plans/Studies & Specifics	This PWB project is warranted because BES will be constructing stormwater facilities as well as storm sewer inlets, laterals, and manholes that conflict with existing water mains.
Major changes since start:	Sept 2017: replanning ahead to match BES schedule and cost plan. Aug 2018: schedule delay to match BES schedule.
Other info / Coordination:	FY18-19 Other $ amount is for cost transfer from BES for construction. BES to provide traffic control and surface restoration. BES's consultant to produce design for this project. The entire project budget is over $3M.

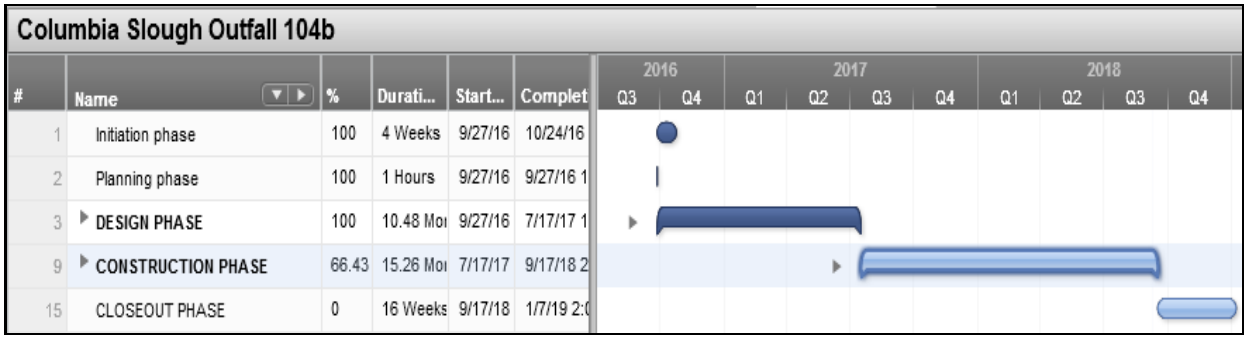
B. Schedule	
Initial mention:	September 2016
Initial planned comp:	April 2018
Current planned comp:	1/7/2019

C. Cost Plan	
Initial total cost est:	$936,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$896,000
Overall rate impact %:	0.055
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02134
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	NE Sandy Boulevard, NE Shaver Street, NE 125th Place, and NE 136 Avenue

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$154,397	$154,397	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$198,569	$138,569	$60,000	$0	$0	$0	$0	$0	$0
Other	$583,000	$0	$583,000	$0	$0	$0	$0	$0	$0
Sum	$940,000	$292,966	$643,000	$0	$0	$0	$0	$0	$0



040 Construction Major Project Continuing

W02134 Columbia Slough Outfall 104b

NE Wheeler Basin Relocations

A. Scope	
Original Description / Purpose:	This project will abandon 90 feet of 4-inch cast iron (CI) water pipe, 380 feet of 6-inch CI water pipe, 70 feet of 6-inch Ductile Iron (DI) water pipe, and 690 feet of 8-inch CI water pipe. Install 50 feet of 4-inch DI pipe, 550 feet of 6-inch DI, and 650 feet of 8-inch DI pipe. Install 2 new hydrants and 7 new water services. Two of the new services will be lowered and sleeved two under Stormwater planters. Install 19 temporary water services and renew the services upon completion of the sewer work.
Rationale: Plans/Studies & Specifics	BES will be installing new sanitary sewer main, manholes, and Stormwater planters which will impact the existing water mains, fire hydrants and water service lines.
Major changes since start:	May 2015: project replanned with additional scope and cost. Aug 2017: BES procurement delays.
Other info / Coordination:	FY19-20 Other $ amount is for cost transfer from BES for construction. There is considerable PWB construction cost for the tie-ins on main relocation and temporary water service installations. BES will cost share per MOU. The water main installation work will be designed by BES's consultant and constructed under BES's construction contract.

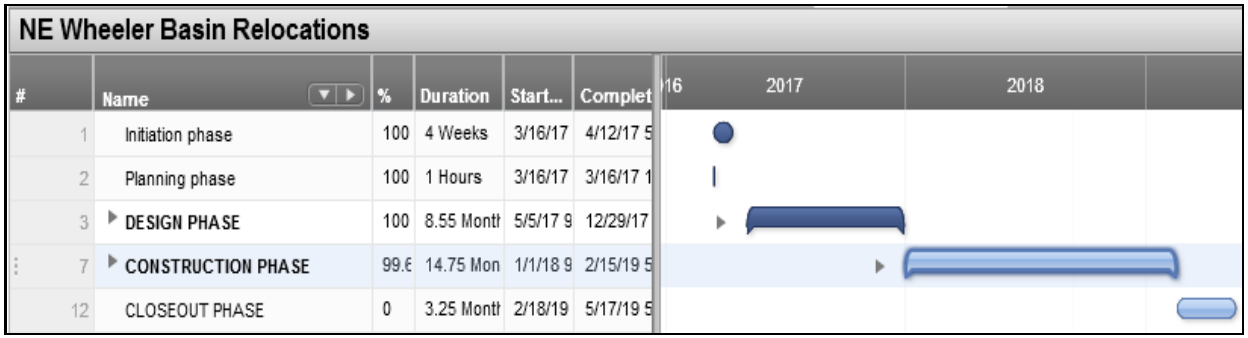
B. Schedule	
Initial mention:	March 2017
Initial planned comp:	September 2018
Current planned comp:	5/17/2019

C. Cost Plan	
Initial total cost est:	$832,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$755,000
Overall rate impact %:	0.048
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02192
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$139,941	$139,941	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$198,257	$148,257	$50,000	$0	$0	$0	$0	$0	$0
Other	$485,000	$0	$10,000	$475,000	$0	$0	$0	$0	$0
Sum	$820,000	$288,198	$60,000	$475,000	$0	$0	$0	$0	$0



040 Construction Major Project Continuing

W02192 NE Wheeler Basin Relocations

Sunnyside North Reconstruction

A. Scope	
Original Description / Purpose:	The project will replace or add about 25 feet of 4-inch, 879 feet of 6-inch, 232 feet of 8-inch main, 75 feet of 20 inch main, and two fire hydrants. About 13 services will be renewed. In about 21 locations conflicts between a new sewer lateral and existing water services may trigger temporary services and service renewal.
Rationale: Plans/Studies & Specifics	BES will be installing new sanitary sewer mains, manholes, stormwater planters, and reconstructing sanitary sewer laterals that will impact the existing water mains, fittings supported by thrust blocks, and water service pipes. The betterment of the 6-inch main in SE 35th Ave. from SE Stark to Oak is justified because the existing 2-inch galvanized dead end main is about 100 years old, has had 3 reported leaks, and is located under a curb. Replacing with a looped main will improve reliability. Adding the fire hydrant will comply with hydrant spacing requirements.
Major changes since start:	Feb 2018: minor additions in scope and schedule per BES request.
Other info / Coordination:	BES and PWB will cost share per MOU. There is 25% contingency in estimate and there is budget risk from late design changes or change orders will increase the cost. There is a risk that BES could change their schedule or the project scope in a way that would affect the schedule.

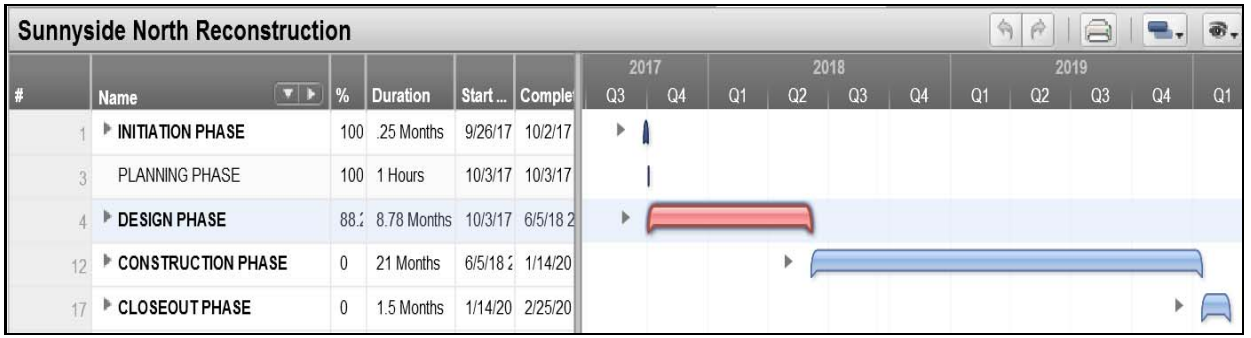
B. Schedule	
Initial mention:	September 2017
Initial planned comp:	November 2019
Current planned comp:	2/25/2020

C. Cost Plan	
Initial total cost est:	$1,077,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$140,000
Overall rate impact %:	0.064
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02237
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$127,100	$127,100	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$797,292	$5,292	$695,000	$97,000	$0	$0	$0	$0	$0
Other	$152,000	$0	$95,000	$57,000	$0	$0	$0	$0	$0
Sum	$1,080,000	$132,392	$790,000	$154,000	$0	$0	$0	$0	$0



030 Design

Major Project Continuing

W02237 Sunnyside North Reconstruction

IA - SW Capitol Hwy fr Garden Home Rd S

A. Scope	
Original Description / Purpose:	This project will abandon 2,500 feet of 6-inch cast iron (CI), 30 feet of 6-inch ductile iron (DI), and 720 feet of 4-inch CI water main, and remove five fire hydrants. Also install 2,908 feet of 8-inch DI and 827 feet of 6-inch DI water main, six fire hydrants, and renew 41 1-inch water service lines. Relocate four fire hydrants. Project will also adjust/relocate 34 existing services and modify one existing regulator's access.
Rationale: Plans/Studies & Specifics	PBOT street improvement requires the installation of new curbs, sidewalks and retaining walls that will impact the existing 6-inch CI water main. The proposed retaining walls will require relocating the existing 6-inch CI water main, and adjustments to 18 backside service lines crossing underneath of the proposed walls.
Major changes since start:	
Other info / Coordination:	PWB, PBOT and BES will cost share per MOU to be finalized.

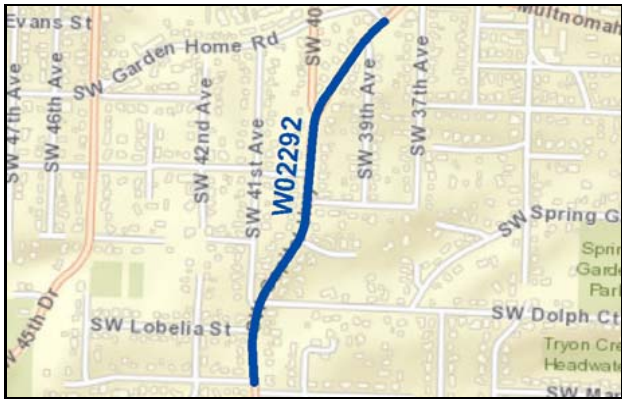
B. Schedule	
Initial mention:	March 2018
Initial planned comp:	August 2020
Current planned comp:	8/20/2020

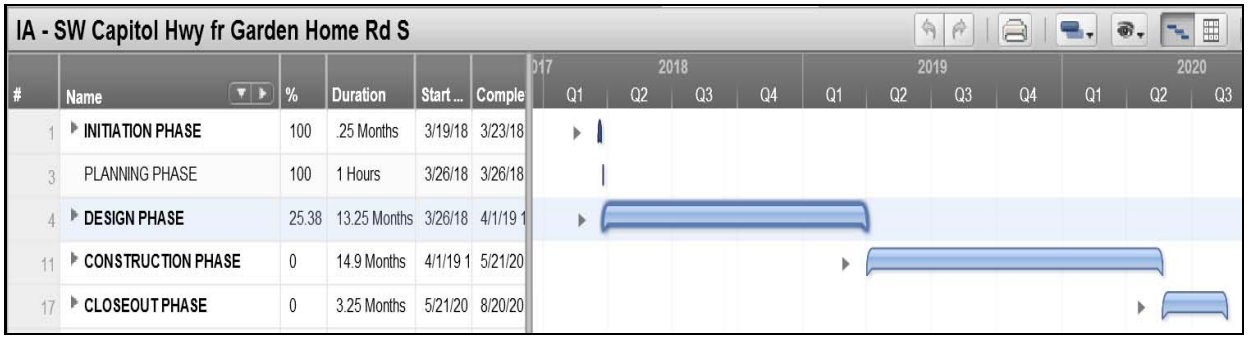
C. Cost Plan	
Initial total cost est:	$2,300,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$30,000
Overall rate impact %:	0.136
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02292
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	Various

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$81,187	$41,187	$40,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,829,000	$0	$357,000	$1,472,000	$0	$0	$0	$0	$0
Other	$400,000	$0	$100,000	$300,000	$0	$0	$0	$0	$0
Sum	$2,310,000	$41,187	$498,000	$1,772,500	$0	$0	$0	$0	$0





030 Design

Major Project - added during FY17-18

W02292 IA - SW Capitol Hwy fr Garden Home Rd

SE Holgate Blvd I-205 Bridge Main Rehab

A. Scope	
Original Description / Purpose:	This project will rehabilitate a 16-inch ductile iron (DI) main located within an I-205 overpass bridge. This work will include replacement of the support system for the 16-inch DI main within the overpass bridge (approx. 300 LF), replacement of approximately 80 LF total of 16-inch DI at the approaches, installation of an expansion joint, and installation of thrust collars at each end of the bridge.
Rationale: Plans/Studies & Specifics	The 16-inch main's support system was identified as failing during a recent inspection. The crossing was isolated to reduce immediate risk. Doing so created two dead end mains that have led to water quality issues in the immediate area. Along with the recommendation of the business case analysis, the water quality concerns are the drivers for the project schedule.
Major changes since start:	
Other info / Coordination:	

B. Schedule	
Initial mention:	April 2018
Initial planned comp:	January 2021
Current planned comp:	1/4/2021

C. Cost Plan	
Initial total cost est:	$543,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$15,000
Overall rate impact %:	0.031
Debt service, FY 17-18 est:	$25,070
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02303
Program:	Distribution
Subprogram:	Distribution Mains
Nearest Address:	SE Holgate Blvd I-205 Bridge Main Rehab

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$52,390	$11,390		$36,000	$5,000	$0	$0	$0	$0	$0
Construction & Land	$304,000	$0		$0	$220,000	$84,000	$0	$0	$0	$0
Other	$174,000	$0		$18,000	$113,000	$43,000	$0	$0	$0	$0
Sum	$530,000	$11,390		$54,000	$334,000	$127,000	$0	$0	$0	$0

030 Design

Major Project - added during FY17-18

W02303 SE Holgate Blvd I-205 Bridge Main Rehab

Fulton Pump Station Improvements

A. Scope	
Original Description / Purpose:	This project will replace the 12 million gallon per day Fulton Pump Station with a new facility located in Willamette Park.
Rationale: Plans/Studies & Specifics	The 2006 Burlingame Service Area Supply Facility Master Plan recommended that the existing Fulton Pump Station be replaced or rehabilitated to mitigate the risk of an extended outage due to failure. Major studies recommending this project include the Burlingame Service Area Supply Facilities Master Plan (2006), the Distribution System Master Plan (2007), and the Fulton Pump Station Improvements Project Basis of Design Report (2007).
Major changes since start:	Cost increase: Preliminary Design identified major operational risk in existing location; a new facility in Willamette Park, including land rights was needed. $545K was transferred from the PWB to Parks. 11/11: schedule delay to investigate alternative procurement. 8/12: cost increase from design complexity. 7/13: cost and schedule increase from design complexity. 7/14: delay from permitting and electrical design, costs shifted FYs. 9/14: cost shift into FY15/16. 03/15: increased contingency, staffing and higher bid than planned. 08/15: cost increase from additional staffing, consulting and risk. 3/16: cost shift to FY16-17. 10/16: cost and schedule increases. 8/17: additional pump control scope added cost + time.
Other info / Coordination:	

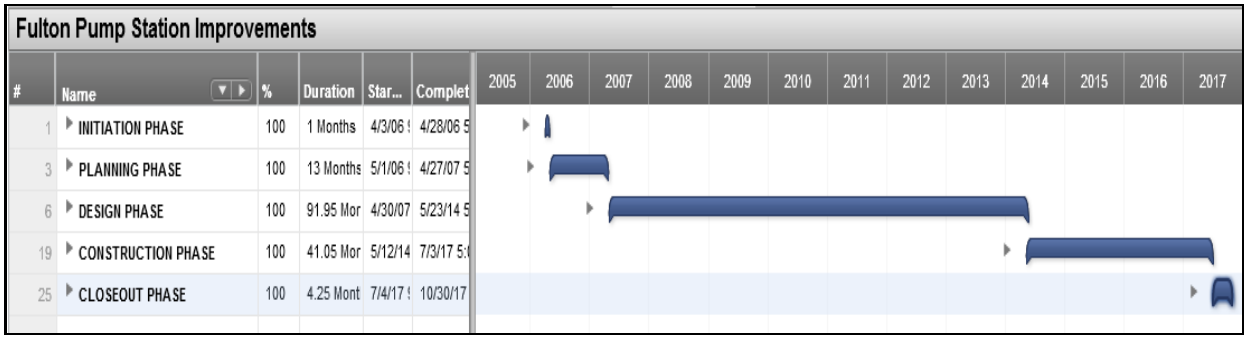
B. Schedule	
Initial mention:	4/3/2006
Initial planned comp:	5/1/2010
Current planned comp:	10/30/2017

C. Cost Plan	
Initial total cost est:	$11,647,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$170,000
Overall rate impact %:	1.096
Debt service, FY 17-18 est:	$881,703
Lifecycle cost est:	Likely decrease

D. Identification	
SAP #:	W01358
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Willamette Park

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$417,431	$417,431		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$18,056,692	$18,056,692		$0	$0	$0	$0	$0	$0	$0
Other	$163,203	$163,203		$0	$0	$0	$0	$0	$0	$0
Sum	$18,640,000	$18,637,326		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01358 Fulton Pump Station Improvements

Greenleaf Pump Station

A. Scope	
Original Description / Purpose:	This project will plan, design and construct a replacement of the Greenleaf pump station at the existing site. Flow upgrades will render Penridge tank superfluous and will be demolished in this project as well. The new pump station will pump directly to the distribution system.
Rationale: Plans/Studies & Specifics	Greenleaf Pump Station (PS) and Penridge Tank (Tank) have high risk ratings due to the need for fire flow in a residential area near Forest Park and parts of the Tank have extensive corrosion. The highest benefit and least-cost alternative was to take out the Tank and rehabilitate the PS with energy-efficient pumps for normal distribution needs and two large pumps for fire flows. Five major studies justify this project. The main study was the 2009 Greenleaf Pump Station & Penridge Service Area Basis of Design Report.
Major changes since start:	8/2014: project restarted, the scope divided into two projects. Portion of previous work retained. 8/2016: technical adjustment in FY18-19 to maintain project total. 8/2017: scope changes increased cost and budget.
Other info / Coordination:	Other studies supporting this project include Evaluation of Pumping and Storage Alternatives to Meet Water Demands in the Northwest Hills Area (1987), the Northwest Hills Master Plan PCR (2006), the Northwest Hills Service Area Master Plan (2007), the Distribution System Master Plan (2007). An associated distribution mains improvement project to complete improvements for fire flow is not included in this project.

B. Schedule	
Initial mention:	July 2014
Initial planned comp:	October 2018
Current planned comp:	3/29/2019

C. Cost Plan	
Initial total cost est:	$1,710,000
FY 17-18 plan on 10/2017:	$1,000,000
FY 17-18 plan on 5/2018:	$1,240,000
Overall rate impact %:	0.162
Debt service, FY 17-18 est:	$130,080
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01446
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Adjacent and south of 431 NW Greenleaf Rd

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$27,325	$27,325	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,357,137	$1,357,137	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,367,608	$1,144,608	$223,000	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$2,750,000	$2,529,070	$223,000	$0	$0	$0	$0	$0	$0

040 Construction

Major Project Continuing

W01446 Greenleaf Pump Station

Tabor PS Improvements

A. Scope	
Original Description / Purpose:	This project will install one permanent 300 kilowatt engine drive generator to power the entire pump station electrical demand. Add a new RTU.
Rationale: Plans/Studies & Specifics	The Tabor 590 Service Area was classified as being deficient for one or more screening service goals, specifically fire, storage and outage. Improvements for the addition of the generator were recommended in the subsequent Tabor 590 PS Generator Technical Memorandum to address risks associated with electrical outages and prevention of potential boil water events.
Major changes since start:	7/2014: preliminary design reduced the original scope (VFD removed) and changed project approach. Reduced cost but increased duration due to land use review. 3/15: added scope, delay due to obtaining land use permits, increased cost. 3/16: delay to match schedule with Tabor Reservoir Adjustment project and costs increased to original estimate.
Other info / Coordination:	The scope was reduced from initial project, eliminating some electrical improvements and the project total.

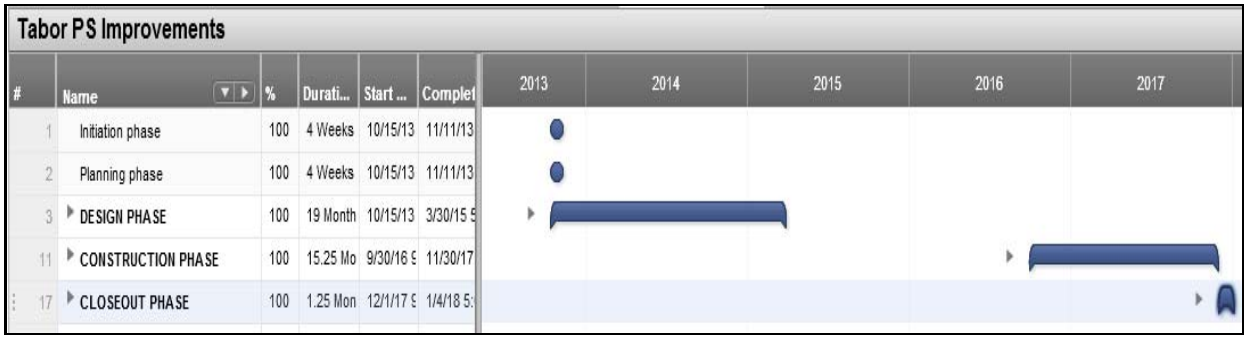
B. Schedule	
Initial mention:	October 2013
Initial planned comp:	September 2015
Current planned comp:	1/4/2018

C. Cost Plan	
Initial total cost est:	$550,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$63,000
Overall rate impact %:	0.030
Debt service, FY 17-18 est:	$24,124
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01757
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Mt. Tabor Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$316,130	$316,130		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$194,880	$194,880		$0	$0	$0	$0	$0	$0	$0
Other	$282	$282		$0	$0	$0	$0	$0	$0	$0
Sum	$510,000	$511,292		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01757 Tabor PS Improvements

Council Crest Tank Roof Replacement

A. Scope	
Original Description / Purpose:	This project will replace the Council Crest Tank roof and upper wall shell.
Rationale: Plans/Studies & Specifics	Council Crest Tank is the highest-elevation tank in SW Portland serving about 1,300 customers. Currently, the tank does not have any backup gravity supplies and the roof has extensive corrosion. Roof failure from earthquake, ice or wind storm would mean a long-term Boil Water Notice and nightly water outages. The reactive repair costs would be higher than planned costs, and the temporary loss of the tank would put operational pressure on other parts of the system. The benefit-cost analysis showed the roof replacement was the least risk cost of any alternative.
Major changes since start:	March 2016: design delay, additional work to test for contamination and more detailed estimating added cost. Feb 2017: increased staffing and review added cost. Feb 2018: new Parks permitting requirement added cost and delay. Aug 2018: budget increased due to high bids.
Other info / Coordination:	A proposed 8-inch bypass, which is a part of the Portland Heights Pump Main Bypass project, must be installed and tested prior to initiating the rehabilitation of the Council Crest Tank roof. The 8-inch bypass allows excess flows from the PHPS to be recycled into the PHT when the PHPS is pumping without the Council Crest Tank.

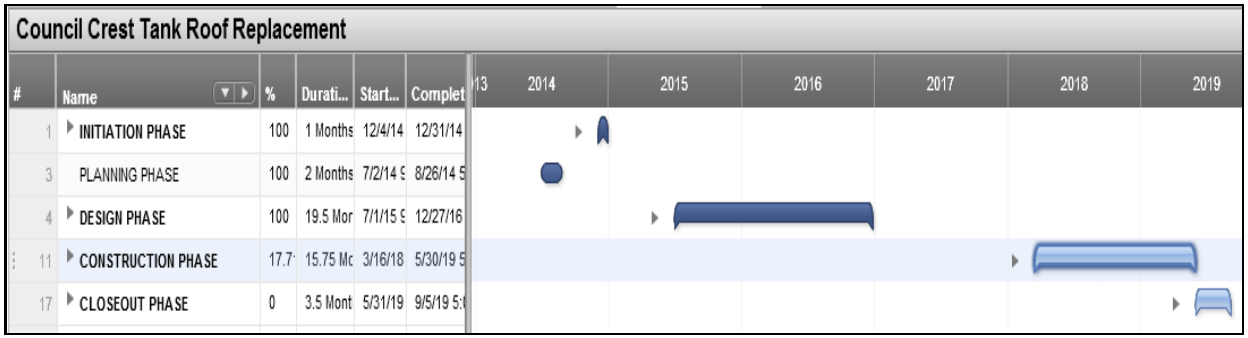
B. Schedule	
Initial mention:	July 2014
Initial planned comp:	May 2018
Current planned comp:	9/5/2019

C. Cost Plan	
Initial total cost est:	$700,000
FY 17-18 plan on 10/2017:	$502,000
FY 17-18 plan on 5/2018:	$167,000
Overall rate impact %:	0.123
Debt service, FY 17-18 est:	$98,860
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01848
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	3445 SW Council Crest Drive

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,556	$1,556	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,889,225	$476,225	$1,403,000	$10,000	$0	$0	$0	$0	$0
Other	$200,000	$0	$200,000	$0	$0	$0	$0	$0	$0
Sum	$2,090,000	$477,781	$1,603,000	$10,000	$0	$0	$0	$0	$0



040 Construction

Major Project Continuing

W01848 Council Crest Tank Roof Replacement

Wash Park PS 2 Transformer Replacement

A. Scope	
Original Description / Purpose:	This project will replace the existing transformers and medium-voltage switchgear at Washington Park Pump Station 2.
Rationale: Plans/Studies & Specifics	One of the two twin transformers in Washington Park pump station 2 have failed. The remaining transformer is supplying the load of the failed unit but is now showing signs of degradation. Loss of the second transformer would cause a loss of service to the neighborhood.
Major changes since start:	
Other info / Coordination:	

B. Schedule	
Initial mention:	May 2018
Initial planned comp:	June 2019
Current planned comp:	1/7/2020

C. Cost Plan	
Initial total cost est:	$1,000,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$15,000
Overall rate impact %:	0.059
Debt service, FY 17-18 est:	$47,302
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02318
Program:	Distribution
Subprogram:	Pump Stations Tanks
Nearest Address:	Washington Park pump station

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$57,958	$3,958		$54,000	$0	$0	$0	$0	$0	$0
Construction & Land	$774,000	$0		$668,000	$106,000	$0	$0	$0	$0	$0
Other	$164,000	$0		$82,000	$82,000	$0	$0	$0	$0	$0
Sum	$1,000,000	$3,958		$804,000	$188,000	$0	$0	$0	$0	$0

030 Design

Major Project - added during FY17-18

W02318 Wash Park PS 2 Transformer Replacement

Water Quality Lab Remodel

A. Scope	
Original Description / Purpose:	The project will create an in-house laboratory section within the existing Water Quality Laboratory at Interstate to support the requirements of the Bull Run Treatment Variance.
Rationale: Plans/Studies & Specifics	In 2012, the State of Oregon granted PWB a variance to the Long Term 2 Enhanced Surface Water Treatment (LT2) Rule for the Bull Run source water. One of the variance conditions requires PWB to monitor for Cryptosporidium. We have been shipping water samples to accredited private contract laboratories--of which only a handful exist. This weekly arrangement has become challenging and there is a projected decline in the commercial Cryptosporidium lab industry. Consequently, PWB must secure its own in-house capabilities and expertise to ensure ongoing LT2 compliance.
Major changes since start:	June 2016: revised schedule. Project stayed at 450K. July 2017: delay in getting materials.
Other info / Coordination:	Project did not need contingency so the final cost is less than the initial total cost estimate.

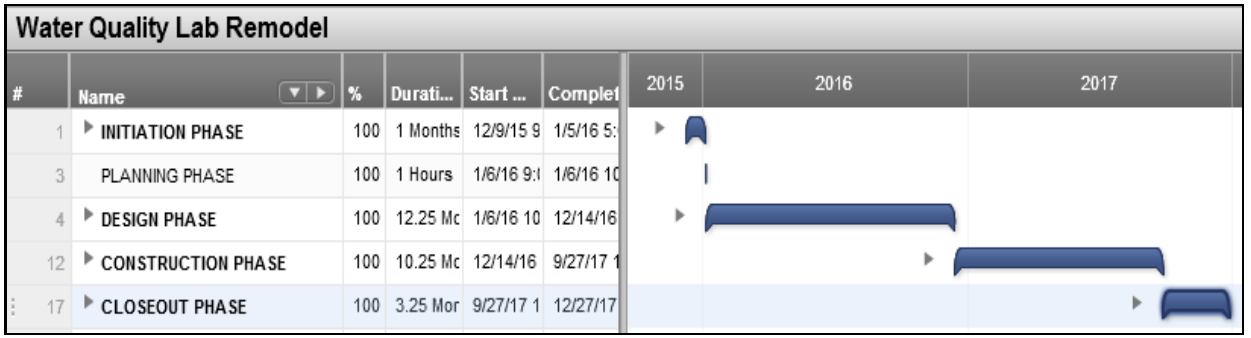
B. Schedule	
Initial mention:	December 2015
Initial planned comp:	April 2017
Current planned comp:	12/27/2017

C. Cost Plan	
Initial total cost est:	$450,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$73,000
Overall rate impact %:	0.022
Debt service, FY 17-18 est:	$17,975
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01836
Program:	Regulatory Compliance
Subprogram:	Water Quality Regulatory Compliance
Nearest Address:	2010 N Interstate

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

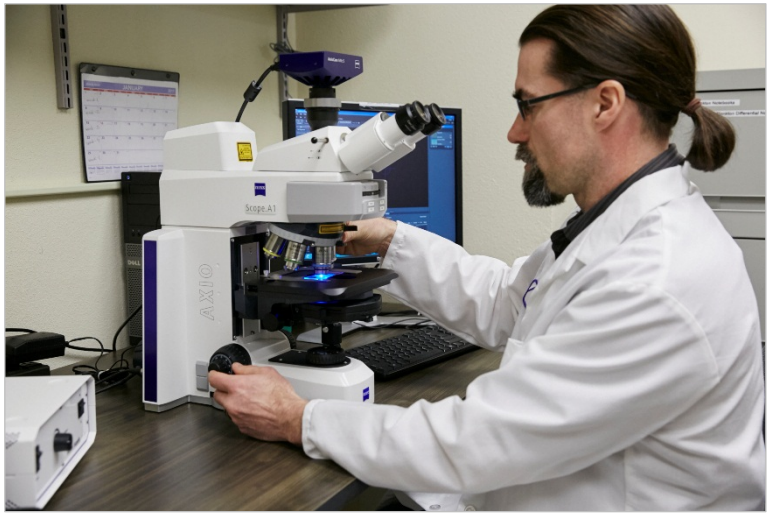
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$320	$320		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$138,598	$138,598		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$241,462	$241,462		$0	$0	$0	$0	$0	$0	$0
Other	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$380,000	$380,380		$0	$0	$0	$0	$0	$0	$0



060 Complete

Major Project Completed

W01836 Water Quality Lab Remodel



Road 10R MP 28.77 - 31.85

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, reconstruct turnouts, pave, and stripe 3.08 miles of Road 10. The road condition assessment indicates the average width of this road meets the design standard, however isolated widening may be required. Current condition ratings indicate one culvert will be replaced with Aluminum Alloy Pipe. Culvert inspection during design may indicate the need to replace more.
Rationale: Plans/Studies & Specifics	This segment of Road 10 provides access from Bull Run Lake to secondary egress from the watershed, should the main route be blocked. This segment is also an important piece of the tour route. This secondary road is at the low end of Fair condition, a remaining service life of approximately 5 years. The road meets the design width for this Class B segment however several failures have occurred in turnouts designed to accommodate passing vehicles. This project is recommended by the 2012 Bull Run Roads Asset Management Plan.
Major changes since start:	Aug 2016: transferred FY15-16 underspending to FY18-19. Aug 2017: construction moved to FY19-20.
Other info / Coordination:	

B. Schedule	
Initial mention:	August 2014
Initial planned comp:	January 2019
Current planned comp:	12/5/2019

C. Cost Plan	
Initial total cost est:	$2,100,000
FY 17-18 plan on 10/2017:	$740,000
FY 17-18 plan on 5/2018:	$142,000
Overall rate impact %:	0.124
Debt service, FY 17-18 est:	$99,806
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01874
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$264,417	$229,417	$35,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,675,475	$10,475	$20,000	$1,645,000	$0	$0	$0	$0	$0
Other	$170,000	$0	$20,000	$150,000	$0	$0	$0	$0	$0
Sum	$2,110,000	$239,892	$75,000	$1,795,000	$0	$0	$0	$0	$0

030 Design

Major Project Continuing

W01874 Road 10R MP 28.77 - 31.85

Road 10H MP 10.95 - 12.56

A. Scope	
Original Description / Purpose:	This project will grind existing pavement, restore road subgrade, pave, and stripe 1.61 miles of Road 10. The road condition assessment indicates the average width of this road meets the design standard, however isolated widening may be required. Current condition ratings indicate one culvert will be replaced with Aluminum Alloy Pipe. Culvert inspection during design may indicate a need to replace more.
Rationale: Plans/Studies & Specifics	This segment of Road 10 provides access from Headworks to secondary egress from the watershed, should the main route be blocked. This secondary road is at the low end of Fair and the road width does not meet the current design standard for this Class A road. This project is recommended by the 2012 Bull Run Roads Asset Management Plan.
Major changes since start:	12/2015: cost increase and schedule delay due to construction environment and weather considerations. 8/2017: replanned project to control costs using alternative construction method. 7/2018: bids increased cost.
Other info / Coordination:	

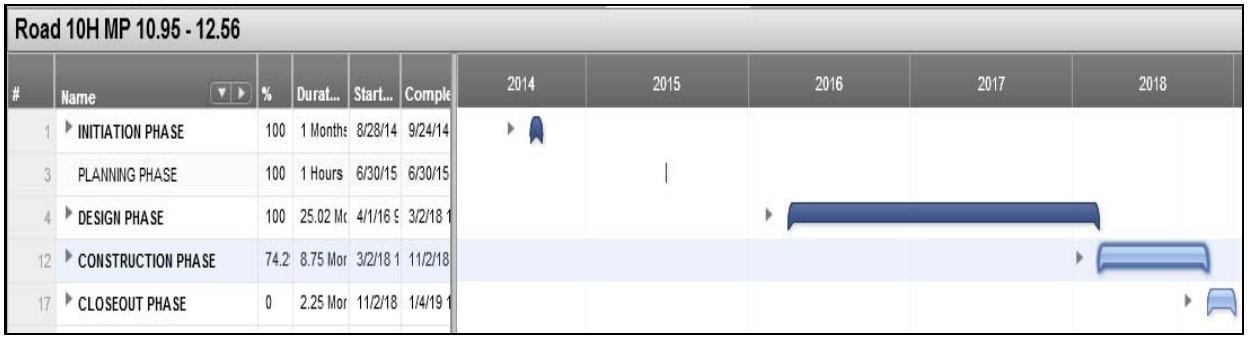
B. Schedule	
Initial mention:	August 2014
Initial planned comp:	December 2017
Current planned comp:	1/4/2019

C. Cost Plan	
Initial total cost est:	$822,000
FY 17-18 plan on 10/2017:	$1,018,000
FY 17-18 plan on 5/2018:	$60,000
Overall rate impact %:	0.077
Debt service, FY 17-18 est:	$61,965
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01875
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Road 10 in the watershed

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$201,386	$201,386		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$1,043,426	$11,450		$1,031,976	$0	$0	$0	$0	$0	$0
Other	$66,608	$0		$66,608	$0	$0	$0	$0	$0	$0
Sum	$1,310,000	$212,836		$1,098,584	$0	$0	$0	$0	$0	$0



040 Construction Major Project Continuing

W01875 Road 10H MP 10.95 - 12.56

Dam 1 Needle Valve Replacement

A. Scope	
Original Description / Purpose:	This project will replace the three existing needle valves, actuators and control panels at Dam 1 with new jet-flow gate valves or fixed cone valves.
Rationale: Plans/Studies & Specifics	The three (3) Dam 1 needle valves water release from Dam 1. The needle valves are 89 years old and were refurbished 24 years ago. They are antiquated, leak, and are difficult to open/close. In 2014, one of the needle valves had a closure failure and another is experiencing operational issues. The federal Bureau of Reclamation replaced all needle valves on federal dams due to safety issues and multiple losses of human life from failure of two needle valves. PWB planning recommended valve replacement 1989 and 2003. The project benefit cost ratio is 3.12.
Major changes since start:	8/16: permitting and hiring consultant added time.2/17: procurement delays. 8/17: further procurement delays and FY cost shifts. 2/2018: estimate increased; refined total project cost.
Other info / Coordination:	Replacement of the needle valves will need to be coordinated with cold water transfers from Reservoir 1 to Reservoir 2 and is considered in the project schedule. Project cost estimate includes 50% contingency due to valve costs, potential constructability issues and long lead time.

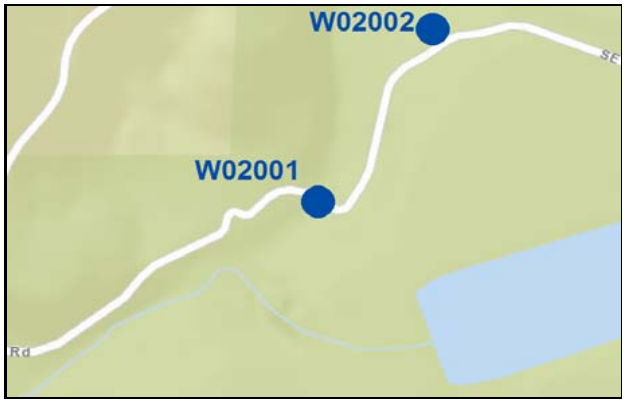
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	October 2018
Current planned comp:	4/29/2020

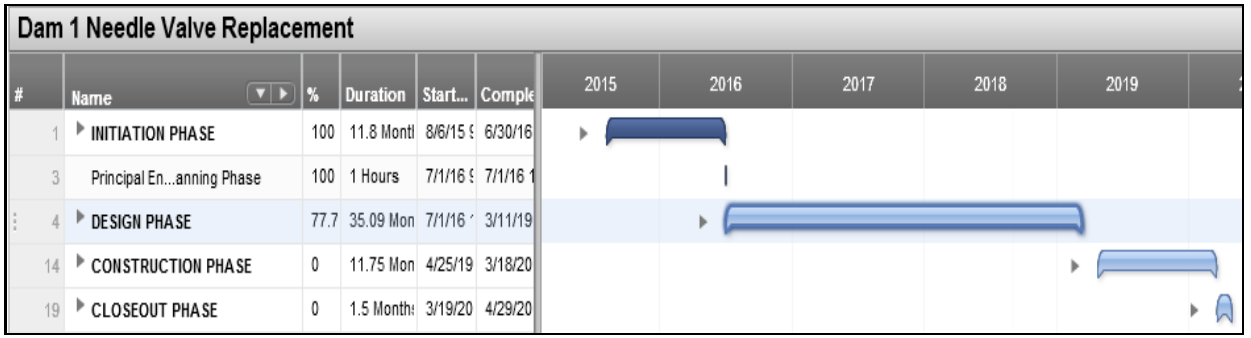
C. Cost Plan	
Initial total cost est:	$3,260,000
FY 17-18 plan on 10/2017:	$252,000
FY 17-18 plan on 5/2018:	$284,000
Overall rate impact %:	0.226
Debt service, FY 17-18 est:	$181,638
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02001
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Dam 1

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$464,940	$372,940	$92,000	$0	$0	$0	$0	$0	$0
Construction & Land	$2,779,000	$0	$1,045,000	$1,734,000	$0	$0	$0	$0	$0
Other	$600,000	$0	$300,000	$300,000	$0	$0	$0	$0	$0
Sum	$3,840,000	$372,940	$1,437,000	$2,034,000	$0	$0	$0	$0	$0





030 Design

Major Project Continuing

W02001 Dam 1 Needle Valve Replacement

Headworks Septic System Replacement

A. Scope	
Original Description / Purpose:	This project will replace the existing septic system (tank and drain field) at Headworks with a new subsurface sewage disposal system including a pump station, force main and drain field at Kaiser Park.
Rationale: Plans/Studies & Specifics	The 1959 septic system operates under a grandfather clause as it is located less than 100 ft from the Bull Run River and does not meet the current Oregon Revised Statutes. Although identified as a low risk in the August 2014 Headworks Facilities Plan, the septic system has failed three times, most recently in September 2014. Replacing the septic system now will prepare the Headworks site for the upcoming facilities improvements, provide a system that is reliable and meets current ORS requirements, and eliminates a drain field too close to the river.
Major changes since start:	8/2017: construction bid higher than estimated. 2/2018: design issues caused permitting delay and increased costs. 7/2018: Clackamas county permitting delays.
Other info / Coordination:	The new subsurface sewage disposal system was previously designed under the 2011 design for Headworks facilities. The existing design will be used and modified as needed to meet any changes in code requirements. The new system is a pumped system and will require maintenance beyond the level of the existing gravity system.

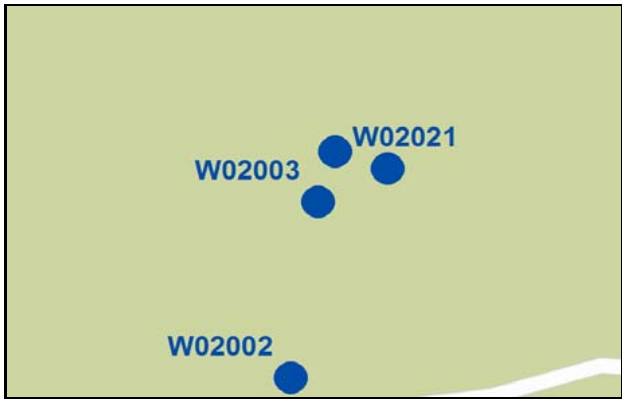
B. Schedule	
Initial mention:	August 2015
Initial planned comp:	February 2018
Current planned comp:	1/16/2019

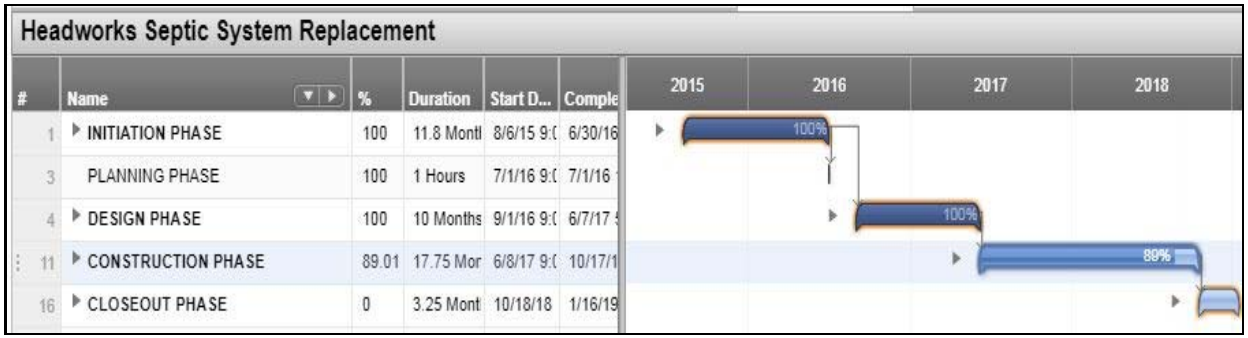
C. Cost Plan	
Initial total cost est:	$470,000
FY 17-18 plan on 10/2017:	$410,000
FY 17-18 plan on 5/2018:	$658,100
Overall rate impact %:	0.042
Debt service, FY 17-18 est:	$34,057
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02003
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Headworks

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$158,663	$158,663		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$559,971	$357,971		$202,000	$0	$0	$0	$0	$0	$0
Other	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum	$720,000	$516,634		$202,000	$0	$0	$0	$0	$0	$0





050 Closeout

Major Project Continuing

W02003 Headworks Septic System Replacement

Microwave Communications System

A. Scope	
Original Description / Purpose:	This project will replace existing microwave communications equipment on 7 towers and facilities throughout the system with new equipment.
Rationale: Plans/Studies & Specifics	The PWB microwave equipment is obsolete and parts are no longer available from the manufacturer. In addition, BTS recommends changing the system in the Watershed from passive to active, which will increase the reliability and bandwidth. In the past year, there have been two equipment failures on the Council Crest tower, which have shut down the SCADA system and resulted in data loss. The microwave system is used by the 800 MHz radio system, the SCADA system, and for some VOIP and data transmissions.
Major changes since start:	Feb 2017: some scope shifted to next FY. Sept 2017: land use issue and small summer work window in watershed may extend construction into FY 18-19. Feb 2018: delay and cost shift due to land use. July 2018: land use, permitting and seasonal restrictions caused delay. Reduced contingency from project total.
Other info / Coordination:	This project will be done for the Water Bureau by BTS under an MOU. PWB will own the equipment while BTS will install and maintain it.

B. Schedule	
Initial mention:	October 2015
Initial planned comp:	June 2018
Current planned comp:	1/28/2020

C. Cost Plan	
Initial total cost est:	$2,214,000
FY 17-18 plan on 10/2017:	$1,626,000
FY 17-18 plan on 5/2018:	$221,414
Overall rate impact %:	0.098
Debt service, FY 17-18 est:	$78,521
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02021
Program:	Supply
Subprogram:	Bull Run Watershed
Nearest Address:	Various locations

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$165,853	$126,853		$39,000	$0	$0	$0	$0	$0	$0
Construction & Land	$1,286,453	$340,453		$672,000	$274,000	$0	$0	$0	$0	$0
Other	$206,000	$0		$90,000	$116,000	$0	$0	$0	$0	$0
Sum	$1,660,000	$467,306		$801,000	$390,000	$0	$0	$0	$0	$0

040 Construction

Major Project Continuing

W02021 Microwave Communications System

Groundwater Electrical Supply Improvements

A. Scope	
Original Description / Purpose:	This project designs and constructs a new high voltage transformer and other components to complete a double-ended electrical substation at the Groundwater Pump Station. It will also design and construct a new main breaker replacement and purchase selected spare components. March 2016: to reduce costs, we will replace the existing main transformer, main medium-voltage circuit breaker, and a few other components while eliminating the parallel transformer feature.
Rationale: Plans/Studies & Specifics	The 2000 PWB System Vulnerability Analysis and later reports identified a vulnerability for electrical failures. The risk cost of a transformer failure is mainly due to the time needed for transformer replacement. The 2009 "Portland Water Bureau Groundwater Pump Station 115kV/4160V Electrical Systems Vulnerability Reduction," proposed 3 alternatives. The benefit cost ratio on this project is over 1.1. Other major studies are the 2008 Groundwater Vulnerability to Flooding and Electrical Outages Project Concept Report and the 2008 Suggestions for Additional GW Vulnerability Reduction Assessment.
Major changes since start:	April 2011: construction pushed out to 2014-15 and to be authorized later. Sept 2012: design is moving faster than planned in FY12-13. Aug 2014: design delays increased cost. March 2015: storm water drainage permitting difficulties increased cost and delayed project. March 2016: replanned project to reduce cost but delayed construction. Feb 2017: consultant, staff and construction estimate increased. Feb 2018: cost decrease because bids were lower than planned.
Other info / Coordination:	

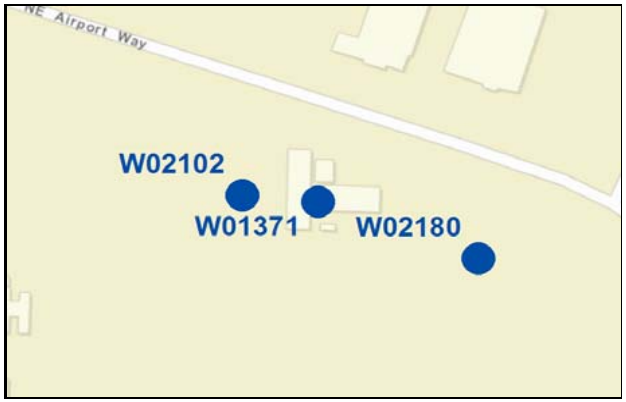
B. Schedule	
Initial mention:	9/1/2009
Initial planned comp:	June 2015
Current planned comp:	2/19/2019

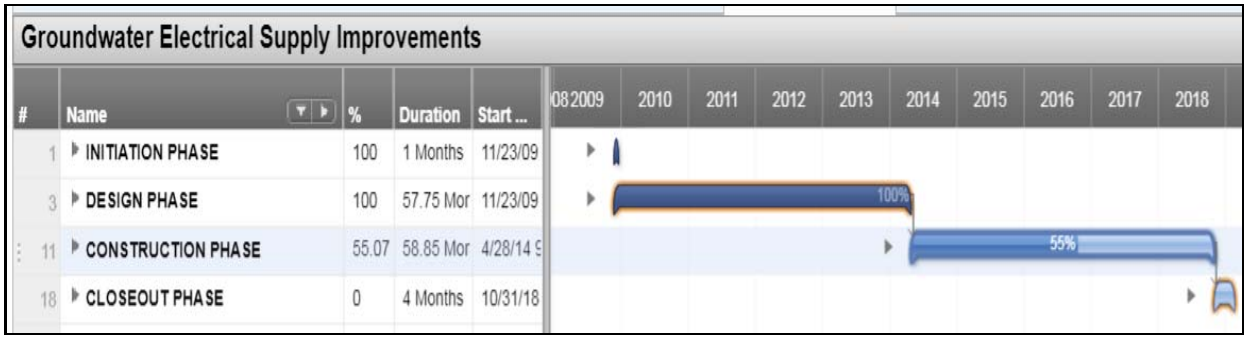
C. Cost Plan	
Initial total cost est:	$2,200,000
FY 17-18 plan on 10/2017:	$550,000
FY 17-18 plan on 5/2018:	$514,000
Overall rate impact %:	0.084
Debt service, FY 17-18 est:	$67,168
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01371
Program:	Supply
Subprogram:	Groundwater
Nearest Address:	NE Airport Way & NE 166th Ave

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$3,110	$3,110		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$698,017	$698,017		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$716,758	$479,758		$237,000	$0	$0	$0	$0	$0	$0
Other	$600	$600		$0	$0	$0	$0	$0	$0	$0
Sum	$1,420,000	$1,181,485		$237,000	$0	$0	$0	$0	$0	$0





040 Construction Major Project Continuing

W01371 Groundwater Electrical Supply Improvements

Vivian Groundwater Improvements - cancelled

A. Scope	
Original Description / Purpose:	This project will design and construct an ammonia treatment system, corrosion control system, chlorine system improvements, two new booster pumps, and electrical upgrades at the Vivian site. Also, upgrade the Supervisory Control And Data Acquisition (SCADA) system and other instrumentation as well as two motor control centers.
Rationale: Plans/Studies & Specifics	Increasing groundwater capacity at the Vivian site helps to meet the 2010 Water Management and Conservation Plan goals regarding capacity. This reduces the risk of customer outage when the Bull Run supply is not available (the CLEM rating for this outage is High). Increased capacity also mitigates some of the seismic supply risks for the Columbia South Shore Well Field. PWB's seismic study recommends developing Vivian. The electrical cost (per gallon) for groundwater from Vivian is less than from the Columbia South Shore Well Field. The project benefits begin to exceed costs after ten years of operation.
Major changes since start:	Feb 2018: project cancelled by mgt.
Other info / Coordination:	

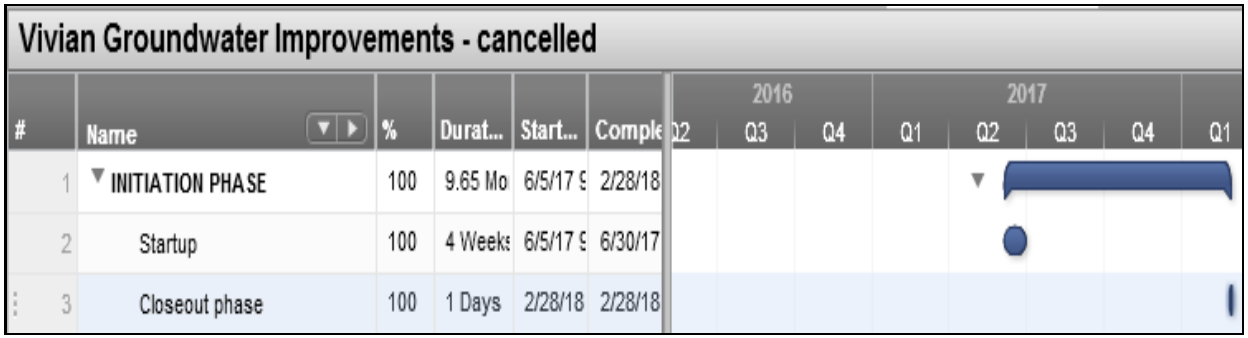
B. Schedule	
Initial mention:	July 2016
Initial planned comp:	December 2020
Current planned comp:	2/28/2018

C. Cost Plan	
Initial total cost est:	$1,730,000
FY 17-18 plan on 10/2017:	$160,000
FY 17-18 plan on 5/2018:	$0
Overall rate impact %:	0.000
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02106
Program:	Supply
Subprogram:	Groundwater
Nearest Address:	14416 SE Center Street

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$0	$0		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$0	$0		$0	$0	$0	$0	$0	$0	$0
Other	$0	$0		$0	$0	$0	$0	$0	$0	$0
Sum		$0		$0	$0	$0	$0	$0	$0	$0



059 Cancelled

Major Project Cancelled

W02106 Vivian Groundwater Improvements

Cancelled – no photo

Mt. Tabor Interpretive Project

A. Scope	
Original Description / Purpose:	This project will develop an interpretive program to educate the public about the history of the Mt. Tabor Reservoirs in particular and the City of Portland potable water system overall.
Rationale: Plans/Studies & Specifics	The development of this interpretive program was a condition of the final findings and decision of the Landmarks Commission in LU 14-218444 HR EN rendered on February 9, 2015.
Major changes since start:	Aug 2018: cost increase due to more public outreach.
Other info / Coordination:	

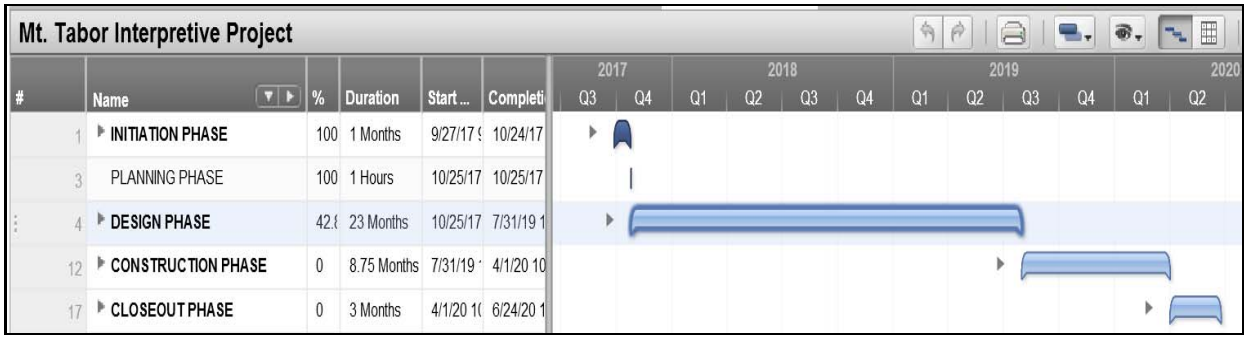
B. Schedule	
Initial mention:	October 2017
Initial planned comp:	June 2020
Current planned comp:	6/24/2020

C. Cost Plan	
Initial total cost est:	$470,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$82,000
Overall rate impact %:	0.034
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02239
Program:	Support
Subprogram:	Bureau Support
Nearest Address:	Mt. Tabor Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

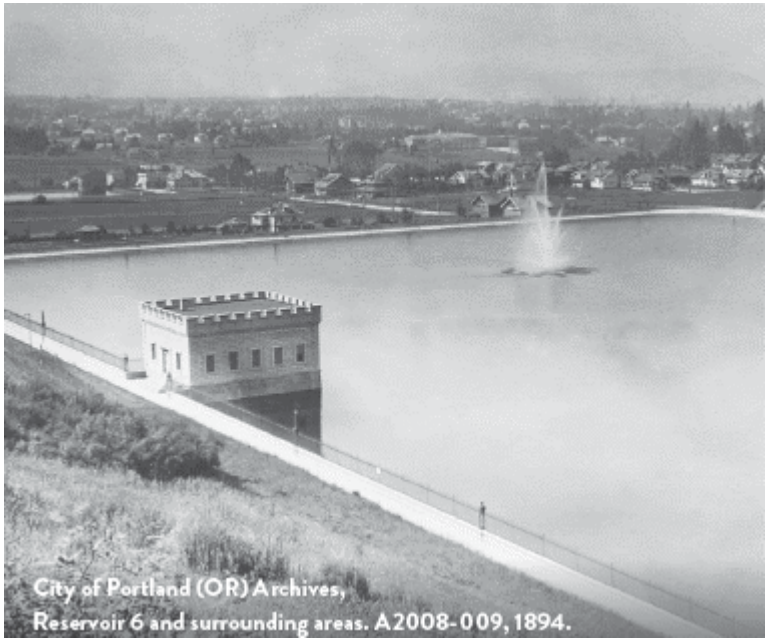
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$295,171	$108,171		$165,000	$22,000	$0	$0	$0	$0	$0
Construction & Land	$260,000	$0		$0	$254,000	$6,000	$0	$0	$0	$0
Other	$16,000	$0		$0	$16,000	$0	$0	$0	$0	$0
Sum	$570,000	$108,171		$165,000	$292,000	$6,000	$0	$0	$0	$0



030 Design

Major Project - added during FY17-18

W02239 Mt. Tabor Interpretive Project



Rockwood PUD Meter Vault

A. Scope	
Original Description / Purpose:	This project will design and construct a replacement meter vault. The new vault will be at the parking lane/ sidewalk area and contain a check valve. We also need piping to reconnect the supply main to the distribution main. Relocate electrical RTU cabinet per Gresham request.
Rationale: Plans/Studies & Specifics	A CLEM analysis completed in 2010 rated this project as being a "high risk" due to safety issues. Vault housing a wholesale meter with instrumentation is located in a high-traffic zone that requires the closure of multiple lanes to access. Due to width and height restrictions, the business case identifies risk exposure for injury to staff working in vault is high. Vault is old, nearing the end of useful life. Asset Management Plan recommended relocation out of traffic lanes to reduce risk.
Major changes since start:	A change management was approved on April 2011. Project was then re-assigned and put on hold until till funds became available. April 2014: project restarted. Aug 2014: project replanned with new schedule and cost estimate. Nov 2014: Fall Budget change as a new Major project. Aug 2015: schedule change due to scope change requested by City of Gresham. March 2016: delay due to easements related to new Gresham request. Feb 2017: easement issue requires further time. Aug 2018: easement requires further time.
Other info / Coordination:	

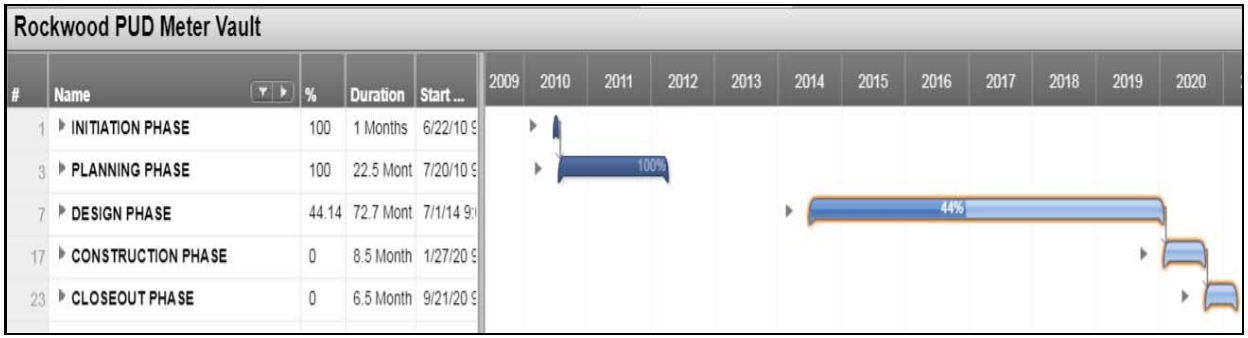
B. Schedule	
Initial mention:	6/22/2010
Initial planned comp:	October 2013
Current planned comp:	3/19/2021

C. Cost Plan	
Initial total cost est:	$530,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$10,000
Overall rate impact %:	0.037
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01489
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	SE 182nd Ave & SE Division St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$157,372	$122,372		$35,000	$0	$0	$0	$0	$0	$0
Construction & Land	$409,589	$19,589		$0	$225,000	$165,000	$0	$0	$0	$0
Other	$60,000	$0		$20,000	$20,000	$20,000	$0	$0	$0	$0
Sum	$630,000	$141,961		$55,000	$245,000	$185,000	$0	$0	$0	$0



030 Design Major Project Continuing

W01489 Rockwood PUD Meter Vault

Gresham Conduit 2 Trestle Upgrades

A. Scope	
Original Description / Purpose:	This project will install 13 ring girders and scour protection on both the El Camino and Beaver Creek trestles.
Rationale: Plans/Studies & Specifics	This project is justified by the business case analysis completed as part of the 2015 Conduits Rehabilitation Plan. This project mitigates Conduit 2 failure risks due to seismic and flooding events which will improve PWB's supply resiliency due to natural disasters. The benefit cost ratio for the El Camino upgrades is 8.04 and the benefit cost ratio for the Beaver Creek upgrades is 6.25.
Major changes since start:	Feb 2017: increased cost due to higher bids and delay in contracting. Feb 2018: additional design work pushed construction into new FY.
Other info / Coordination:	

B. Schedule	
Initial mention:	August 2015
Initial planned comp:	December 2018
Current planned comp:	6/29/2020

C. Cost Plan	
Initial total cost est:	$1,150,000
FY 17-18 plan on 10/2017:	$655,000
FY 17-18 plan on 5/2018:	$298,000
Overall rate impact %:	0.076
Debt service, FY 17-18 est:	$61,492
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02006
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 2's El Camino and Beaver Creek trestles

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$546,200	$383,200	$163,000	$0	$0	$0	$0	$0	$0
Construction & Land	$456,000	$0	$55,000	$401,000	$0	$0	$0	$0	$0
Other	$301,000	$0	$75,000	$226,000	$0	$0	$0	$0	$0
Sum	$1,300,000	$383,200	$292,000	$627,000	$0	$0	$0	$0	$0

030 Design

Major Project Continuing

W02006 Gresham Conduit 2 Trestle Upgrades

Conduit 3 Internal Inspection

A. Scope	
Original Description / Purpose:	This project will complete a condition assessment of 6 miles of sections of Conduit 3 and develop strategies for rehabilitation and replacement.
Rationale: Plans/Studies & Specifics	This is one of several projects that resulted from the PWB Conduit Rehabilitation Plan (January 2015). The plan recommended a detailed investigation of the condition of the three conduits in areas that are known to have prior repairs due to leaks, landslide potential and corrosive soil properties. PWB will use the findings from this project to identify possible capital improvement projects.
Major changes since start:	Feb 2017: consultant work and project time increased. Scope reduced from 8 to 6 miles due to time constraint. Increased consulting scope added to costs.
Other info / Coordination:	

B. Schedule	
Initial mention:	February 2016
Initial planned comp:	September 2017
Current planned comp:	4/24/2018

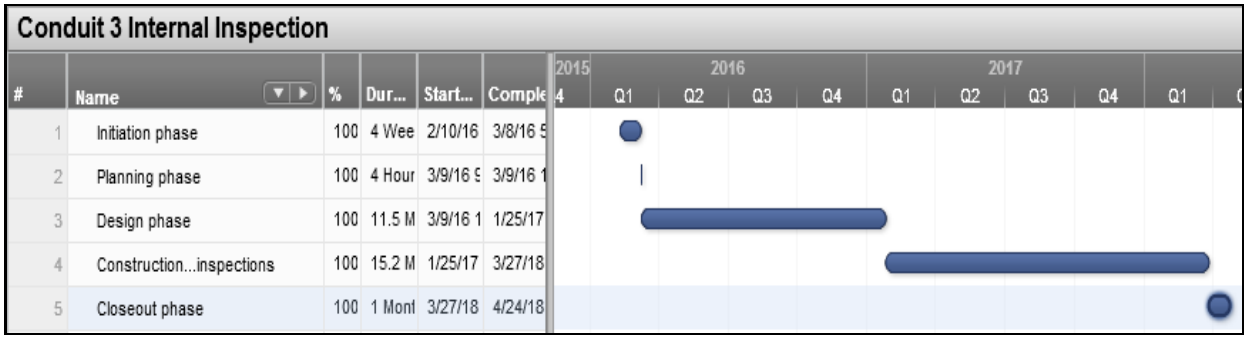
C. Cost Plan	
Initial total cost est:	$1,030,000
FY 17-18 plan on 10/2017:	$62,000
FY 17-18 plan on 5/2018:	$817,000
Overall rate impact %:	0.104
Debt service, FY 17-18 est:	$83,251
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02057
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 3

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,755,503	$1,755,503	$0	$0	$0	$0	$0	$0	$0
Construction & Land	$114	$114	$0	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sum	$1,760,000	$1,755,617	$0	$0	$0	$0	$0	$0	$0

No Map for This Project



060 Complete

Major Project Completed

W02057 Conduit 3 Internal Inspection

Sandy River Crossing Outfall - cancelled

A. Scope	
Original Description / Purpose:	This project will design and install approximately 300 linear feet of 36-inch pipe for a new outfall at the Sandy River Crossing, including a new outfall structure.
Rationale: Plans/Studies & Specifics	Use of the new outfall will lower risk cost for the bureau, shorten the length of time to flush or reactivate Conduit 2 or 4, and reduce the use of groundwater necessary during turbidity events in the Bull Run Watershed. The project will also restore operational flexibility to the conduits that was lost when Roslyn Lake was taken off line.
Major changes since start:	Nov 2017: project cancelled due to new filtration treatment project.
Other info / Coordination:	

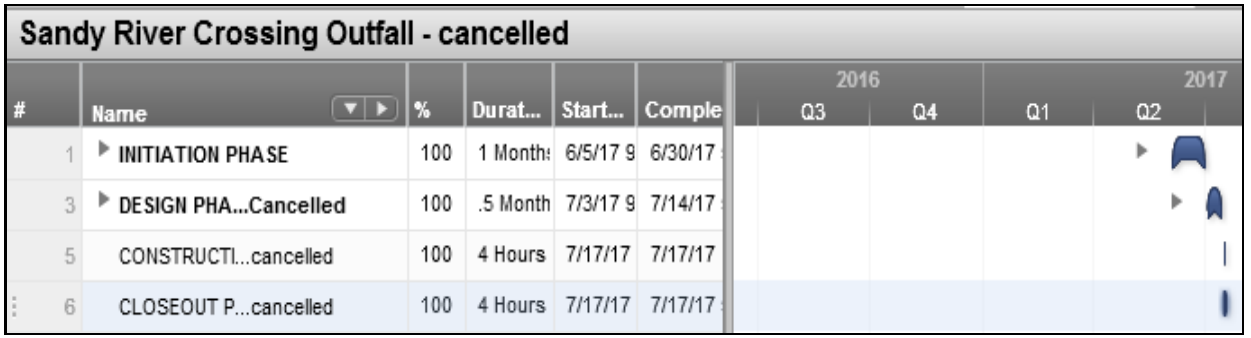
B. Schedule	
Initial mention:	August 2016
Initial planned comp:	January 2020
Current planned comp:	7/17/2017

C. Cost Plan	
Initial total cost est:	$650,000
FY 17-18 plan on 10/2017:	$190,000
FY 17-18 plan on 5/2018:	$190,000
Overall rate impact %:	0.001
Debt service, FY 17-18 est:	$568
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02104
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Between Dodge Park and Sandy River Station

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$0	$0		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$0	$0		$0	$0	$0	$0	$0	$0	$0
Other	$12,441	$12,441		$0	$0	$0	$0	$0	$0	$0
Sum	$12,000	$12,441		$0	$0	$0	$0	$0	$0	$0



059 Cancelled

Major Project Cancelled

W02104 Sandy River Crossing Outfall

Cancelled – no photo

Conduit 2 Internal Inspection

A. Scope	
Original Description / Purpose:	This project will investigate approximately 8 total miles of smaller sections of Conduit 2 that are located in highly vulnerable areas, record findings from the investigation, identify limits of damaged sections, and propose strategies to address the identified defects.
Rationale: Plans/Studies & Specifics	This is one of several projects that resulted from the PWB Conduit Rehabilitation Plan (January 2015). The plan recommended a detailed investigation of the condition of the three conduits in areas that are known to have prior repairs due to leaks, landslide potential and corrosive soil properties. PWB will use the findings from this project to identify possible capital improvement projects.
Major changes since start:	Feb 2018: cost shift due to regulatory changes. July 2018: delay in completing data analysis.
Other info / Coordination:	

B. Schedule	
Initial mention:	May 2017
Initial planned comp:	January 2019
Current planned comp:	12/21/2018

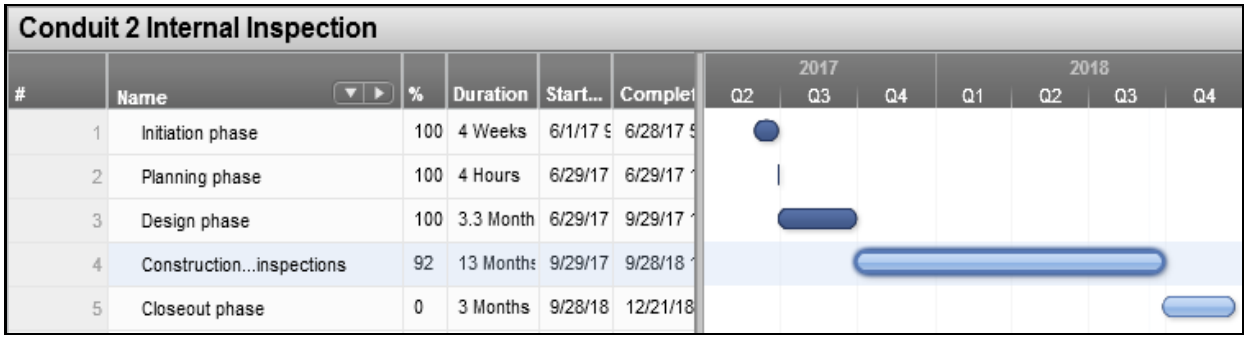
C. Cost Plan	
Initial total cost est:	$1,788,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$1,493,000
Overall rate impact %:	0.106
Debt service, FY 17-18 est:	$0
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02209
Program:	Transmission & Terminal Storage
Subprogram:	Conduits Transmission Mains
Nearest Address:	Conduit 2

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,333,908	$1,333,908		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$417,000	$0		$417,000	$0	$0	$0	$0	$0	$0
Other	$44,744	$744		$44,000	$0	$0	$0	$0	$0	$0
Sum	$1,800,000	$1,334,652		$461,000	$0	$0	$0	$0	$0	$0

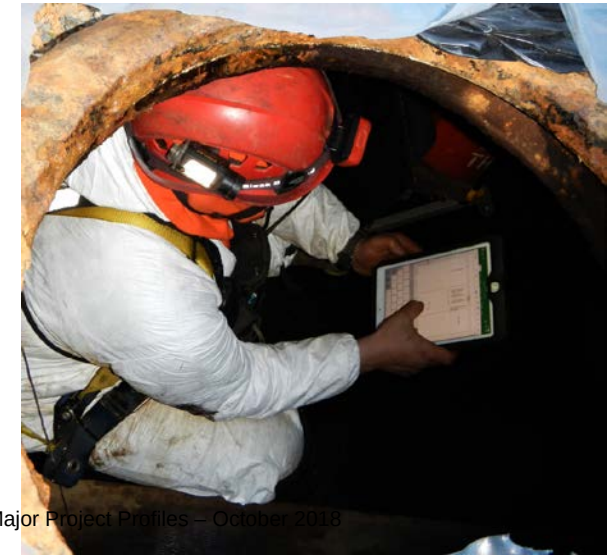
No Map for This Project



040 Construction

Major Project Continuing

W02209 Conduit 2 Internal Inspection



Washington Park Reservoir 3

A. Scope	
Original Description / Purpose:	The project planned, designed and constructed a new buried reservoir to replace open Reservoir 3. This project was one solution toward compliance with LT2 replacement of the open reservoirs. It is assumed that Reservoir 4 will be used as the overflow detention, dechlorination and stormwater structure. We envision that the buried reservoir would be topped with a reflecting pond and historical features would be protected as much as possible.
Rationale: Plans/Studies & Specifics	This project is critical and is identified in the 3/27/09 EPA approved LT2 Storage Plan. Published studies include: Open Distribution Reservoir Study, April 1976; Open Reservoir Study Phase I Summary Report, January 2002 Update; and the Open Reservoir Study Phase II Planning Summary Report. According to the schedule accepted by EPA, the buried Reservoir 3 must be operational and Reservoir 4 must be disconnected by December 2020.
Major changes since start:	8/10: planning phase and procurement delayed completion to 3/2015. 2/11: further procurement delay. 5/12: OHA denied PWB request for LT2 compliance delay and told PWB to meet 3/27/2009 schedule. 2012: Basis of Design Report completed, new estimate for Reservoir 3 only is $67M. Schedule and cost adjusted. 6/13: Increased total due to landslide mitigation and higher contingency as well as multiyear cost plan. 3/15: cost plan shift no change in total. 8/15: cost and schedule change due to geotech, structural and historic commission. 3/16: cost change as part of finalizing design. 8/16: updated FY cost plan. 8/17: updated FY cost plan. 8/18: increased total due to design and construction costs.
Other info / Coordination:	This project is also known as Washington Park Reservoir Improvements. Reservoir 3 is expected to be buried with some form of reflecting pool on top which will increase long-term maintenance costs. Reservoir 4 will remain as an overflow and stormwater basin. Historical features are being preserved. Other improvements include piping revisions and site work.

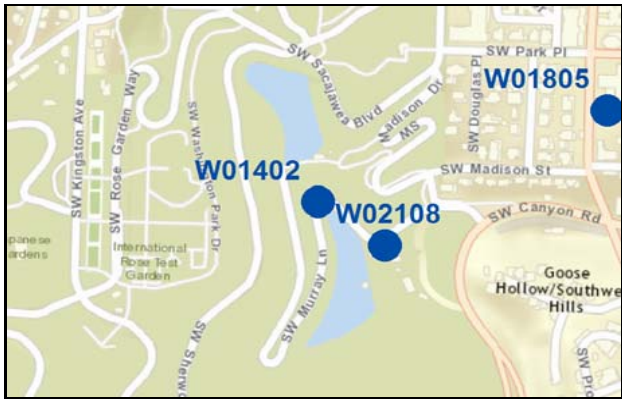
B. Schedule	
Initial mention:	3/27/2009
Initial planned comp:	December 2020
Current planned comp:	3/29/2024

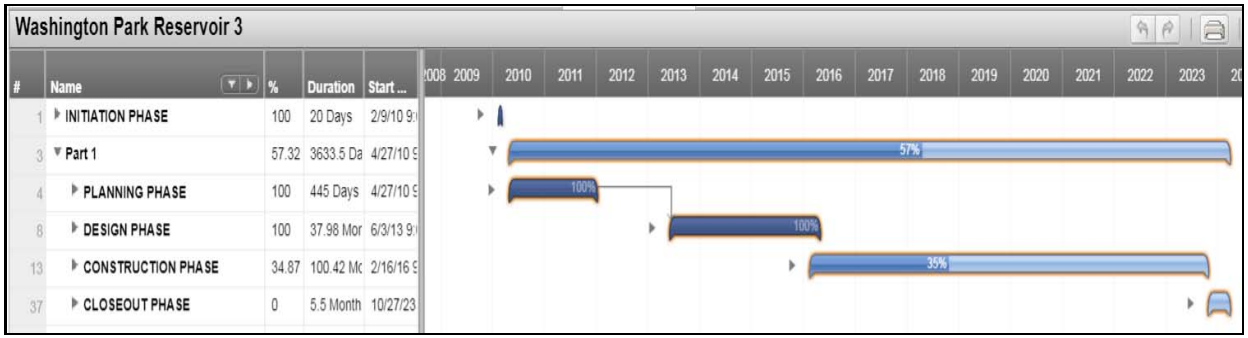
C. Cost Plan	
Initial total cost est:	$61,132,686
FY 17-18 plan on 10/2017:	$54,100,000
FY 17-18 plan on 5/2018:	$37,638,350
Overall rate impact %:	12.059
Debt service, FY 17-18 est:	$9,696,836
Lifecycle cost est:	Likely increase

D. Identification	
SAP #:	W01402
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	SW Jefferson Rd & SW Murray St

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$785,776	$785,776		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$21,288,516	$21,288,516		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$181,906,131	$47,842,131		$33,958,000	$35,176,000	$31,495,000	$9,180,000	$12,535,000	$11,720,000	$0
Other	$1,017,515	$82,515		$100,000	$100,000	$300,000	$120,000	$215,000	$100,000	$0
Sum	$205,000,000	$69,998,938		$34,058,000	$35,276,000	$31,795,000	$9,300,000	$12,750,000	$11,820,000	$0





040 Construction Major Project Continuing

W01402 Washington Park Reservoir 3

Tabor Reservoir Adjustments

A. Scope	
Original Description / Purpose:	This project provides adjustments to piping, structures and other features at Mt. Tabor in order to move storage elsewhere and physically disconnect the open reservoirs from the public water system for compliance with LT2. Project will be done in a manner to protect the existing historical structures.
Rationale: Plans/Studies & Specifics	This project is critical and needed because of LT2 elimination of open reservoirs and is a project identified in the 3/27/09 EPA approved LT2 Storage Plan. This project must be complete in order to disconnect Reservoirs #1, #5 and #6 from the public water system.
Major changes since start:	#1 June 2010: reduced scope and costs from $42M to $5M. # 2 Sept 2011: Project on hold. #3 May 2012: OHA denied request to delay LT2 compliance and told to meet 3/27/2009 schedule. #4 Sept 2012: adjust fiscal years funding. #5 Fall 2012: Split project into 2 projects for ROW vs onsite work. #6 April 2013: scope, schedule and budget increase. #7 June 2013: changed project total and cash flow. # 8 Aug 2014: permitting, scope and outreach changes increased costs. 3/15: add scope, duration, cost and increased contingency per land use conditional approval.
Other info / Coordination:	

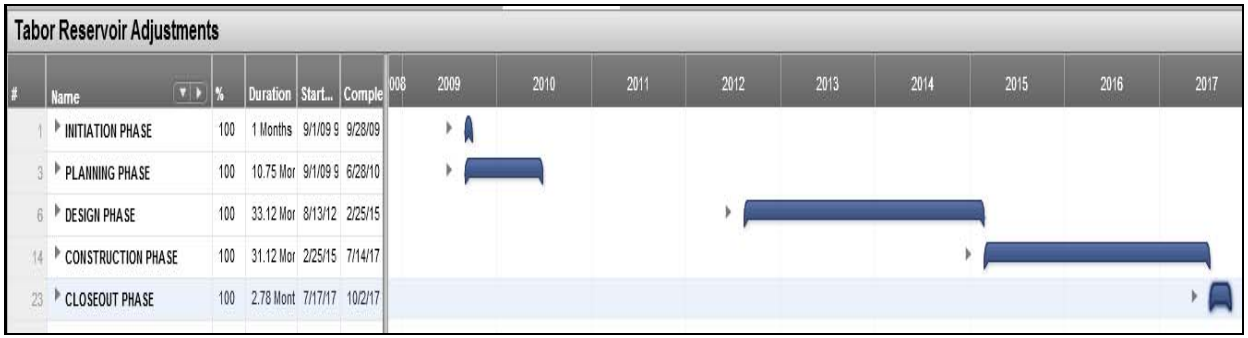
B. Schedule	
Initial mention:	3/27/2009
Initial planned comp:	June 2016
Current planned comp:	10/2/2017

C. Cost Plan	
Initial total cost est:	$6,406,994
FY 17-18 plan on 10/2017:	$159,000
FY 17-18 plan on 5/2018:	$159,000
Overall rate impact %:	0.404
Debt service, FY 17-18 est:	$324,489
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W01524
Program:	Transmission & Terminal Storage
Subprogram:	Terminal Reservoirs
Nearest Address:	Tabor Reservoir

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$53,218	$53,218		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$1,982,912	$1,982,912		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$4,822,575	$4,822,575		$0	$0	$0	$0	$0	$0	$0
Other	$1,127	$1,127		$0	$0	$0	$0	$0	$0	$0
Sum	$6,860,000	$6,859,832		$0	$0	$0	$0	$0	$0	$0



055 Closeout Warranty

Major Project Completed

W01524 Tabor Reservoir Adjustments

Chlorine Scrubber Replacement - cancelled

A. Scope	
Original Description / Purpose:	This project will replace the existing liquid media chlorine scrubber with a new dry media chlorine scrubber at the Headworks facility.
Rationale: Plans/Studies & Specifics	The existing chlorine scrubber is at the end of its useful life, requires frequent maintenance, poses safety hazards. The Headworks Facilities Plan has given the the project a High CLEM rating. The new dry scrubber unit reduces maintenance costs and considerably lowers the risk of a safety issue. The business case recommended replacement with a benefit to cost ratio of 1.1.
Major changes since start:	Aug 2017: project is being reconsidered in light of Council decision on Treatment. Sept 2017: new scrubber cancelled.
Other info / Coordination:	

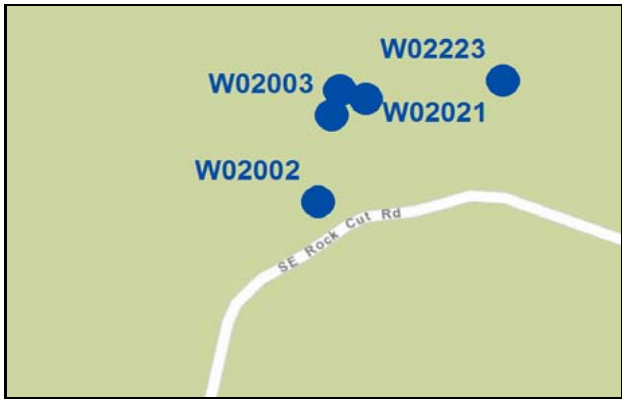
B. Schedule	
Initial mention:	July 2015
Initial planned comp:	June 2018
Current planned comp:	12/1/2017

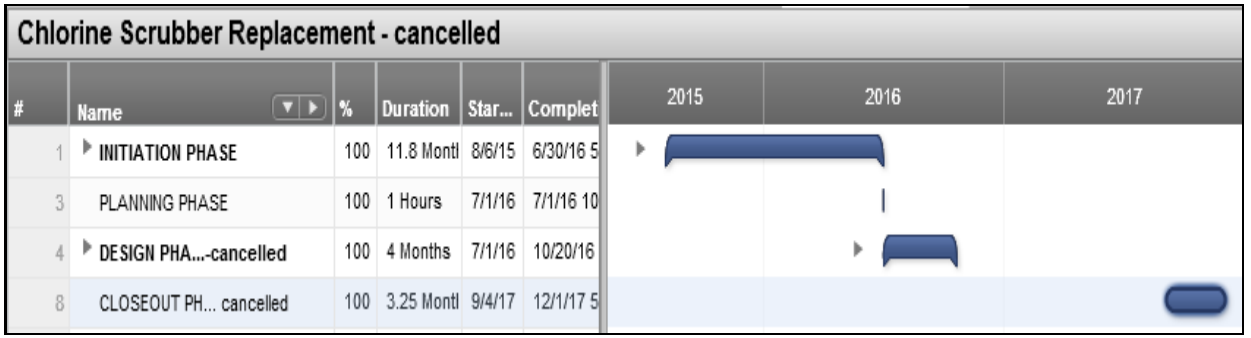
C. Cost Plan	
Initial total cost est:	$485,000
FY 17-18 plan on 10/2017:	$400,000
FY 17-18 plan on 5/2018:	$10,000
Overall rate impact %:	0.004
Debt service, FY 17-18 est:	$3,358
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02002
Program:	Treatment
Subprogram:	Treatment
Nearest Address:	Headworks

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)		FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0		$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$60,813	$60,813		$0	$0	$0	$0	$0	$0	$0
Construction & Land	$0	$0		$0	$0	$0	$0	$0	$0	$0
Other	$9,896	$9,896		$0	$0	$0	$0	$0	$0	$0
Sum	$71,000	$70,709		$0	$0	$0	$0	$0	$0	$0





059 Cancelled

Major Project Cancelled

W02102 Chlorine Scrubber Replacement

Cancelled – no photo

Corrosion Control Improvements

A. Scope	
Original Description / Purpose:	This project will design and construct a corrosion control treatment facility at the Lusted Hill Treatment Facility.
Rationale: Plans/Studies & Specifics	The project is required to maintain compliance with the Lead and Copper Rule (LCR) and meet Oregon Health Authority's (OHA) compliance schedule to implement improved corrosion control treatment. A benefit cost ratio was not calculated for this project due to the regulatory compliance requirement.
Major changes since start:	Feb 2018: labor savings; minor cost shift, no project total change. Aug 2018: resequencing of tasks and cost plan.
Other info / Coordination:	Oregon Health Authority's compliance schedule includes start and completion dates for design and construction with improved corrosion control treatment beginning by 4/30/22.

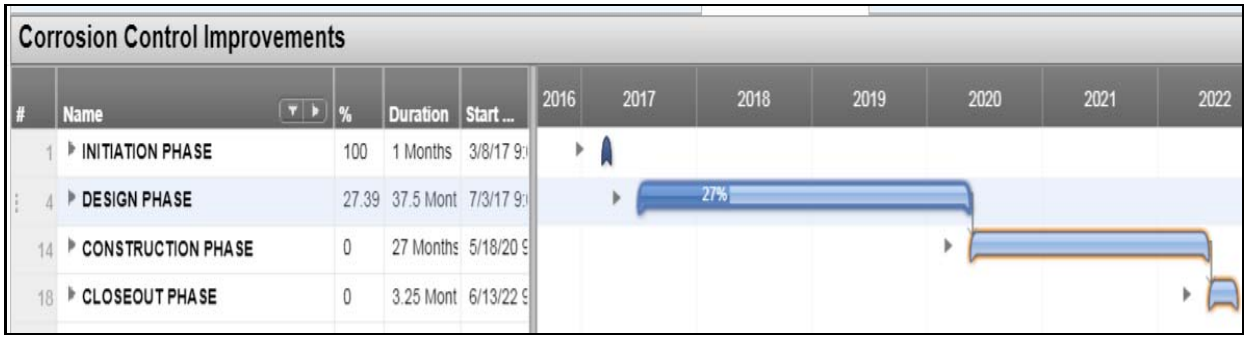
B. Schedule	
Initial mention:	March 2017
Initial planned comp:	December 2022
Current planned comp:	9/9/2022

C. Cost Plan	
Initial total cost est:	$19,916,000
FY 17-18 plan on 10/2017:	$910,000
FY 17-18 plan on 5/2018:	$533,000
Overall rate impact %:	1.172
Debt service, FY 17-18 est:	$942,249
Lifecycle cost est:	No material change

D. Identification	
SAP #:	W02190
Program:	Treatment
Subprogram:	Treatment
Nearest Address:	Lusted facility

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

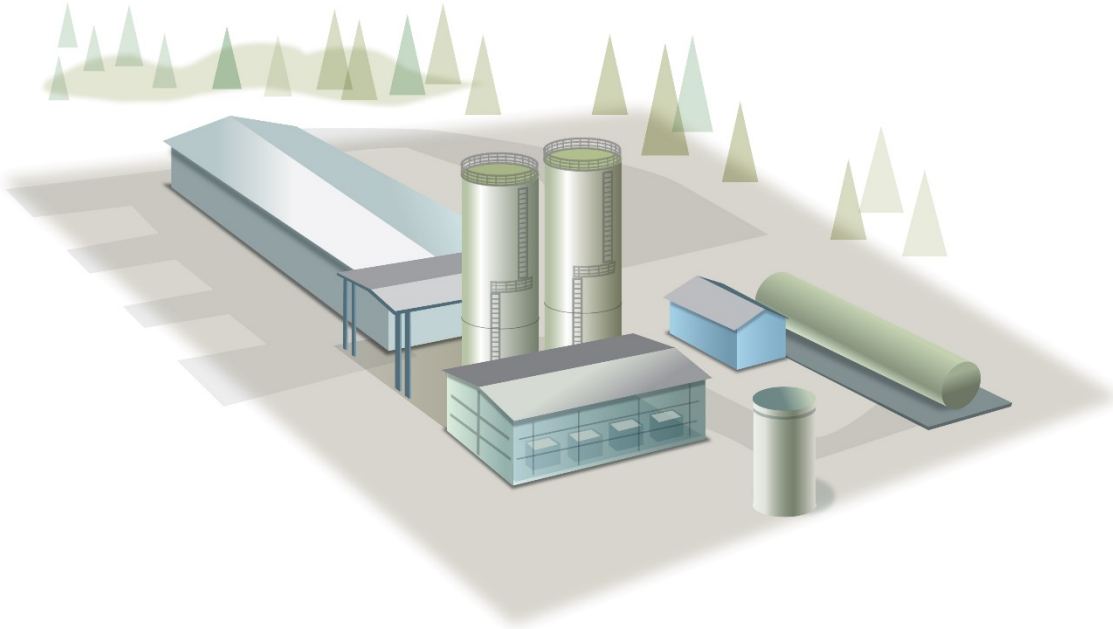
	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Permitting	$3,257,132	$322,132	$1,702,000	$1,233,000	$0	$0	$0	$0	$0
Construction & Land	$12,982,000	$0	$0	$0	$5,772,000	$6,780,000	$430,000	$0	$0
Other	$3,677,000	$0	$118,000	$368,000	$1,710,000	$1,450,000	$31,000	$0	$0
Sum	$19,920,000	$322,132	$1,820,000	$1,601,000	$7,482,000	$8,230,000	$461,000	$0	$0



030 Design

Major Project Continuing

W02190 Corrosion Control Improvements



Bull Run Filtration

A. Scope	
Original Description / Purpose:	This project will plan, design and construct a new filtration plant for the City of Portland's water supply. The first step will be to develop a Basis of Design Report. This Basis of Design Report will include evaluation of needs and alternatives, implementation of a pilot study, and the creation of the report. After planning, the project will hire a design consultant and proceed with the design and construction of the treatment facility.
Rationale: Plans/Studies & Specifics	The Portland City Council has directed the Water Bureau to comply with the Oregon Health Authority's order to treat drinking water from the Bull Run Watershed for Cryptosporidium by proceeding with planning, design and construction of a filtration plant.
Major changes since start:	Aug 2018: cost plan adjustments over FYs. Total unchanged.
Other info / Coordination:	After plant is constructed, maintenance costs will likely increase by $5 million annually. The project contingency amount is estimated at 30% with additional contingency included in the last year. After the Planning phase is complete, the project cost and contingency will be re-evaluated.

B. Schedule	
Initial mention:	September 2017
Initial planned comp:	August 2027
Current planned comp:	7/25/2028

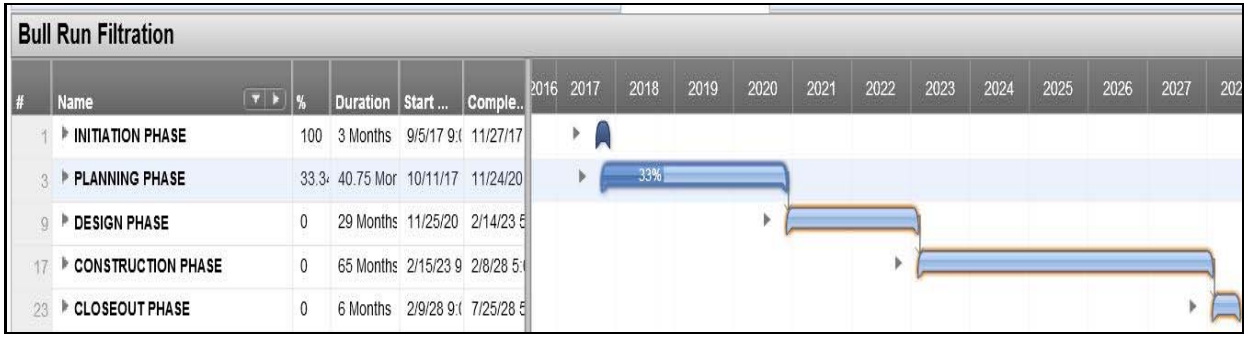
C. Cost Plan	
Initial total cost est:	$500,000,000
FY 17-18 plan on 10/2017:	$0
FY 17-18 plan on 5/2018:	$910,000
Overall rate impact %:	29.412
Debt service, FY 17-18 est:	$23,650,819
Lifecycle cost est:	Likely increase in cost

D. Identification	
SAP #:	W02229
Program:	Treatment
Subprogram:	Treatment
Nearest Address:	TBD after planning - no map

E. Project Actual and FY Plans Breakout (numbers may not add up due to rounding)

	Project Total (actual+ all FY plans)	Past FY Actual (life up to 6/30/2018)	FY 18-19 (FY0 Plan)	FY 19-20 (FY1 Plan)	FY 20-21 (FY2 Plan)	FY 21-22 (FY3 Plan)	FY 22-23 (FY4 Plan)	FY 23-24 (FY5 Plan)	All Following FYs
Planning	$35,798,768	$913,768	$6,400,000	$9,235,000	$9,250,000	$7,000,000	$3,000,000	$0	$0
Design & Permitting	$54,100,000	$0	$0	$2,200,000	$19,800,000	$24,875,000	$7,225,000	$0	$0
Construction & Land	$337,894,474	$19,474	$0	$0	$0	$0	$24,470,000	$42,000,000	$303,405,000
Other	$40,207,000	$0	$942,000	$1,300,000	$1,700,000	$3,000,000	$5,955,000	$6,000,000	$21,310,000
Sum	$500,000,000	$933,242	$7,342,000	$12,735,000	$30,750,000	$34,875,000	$40,650,000	$48,000,000	$324,715,000

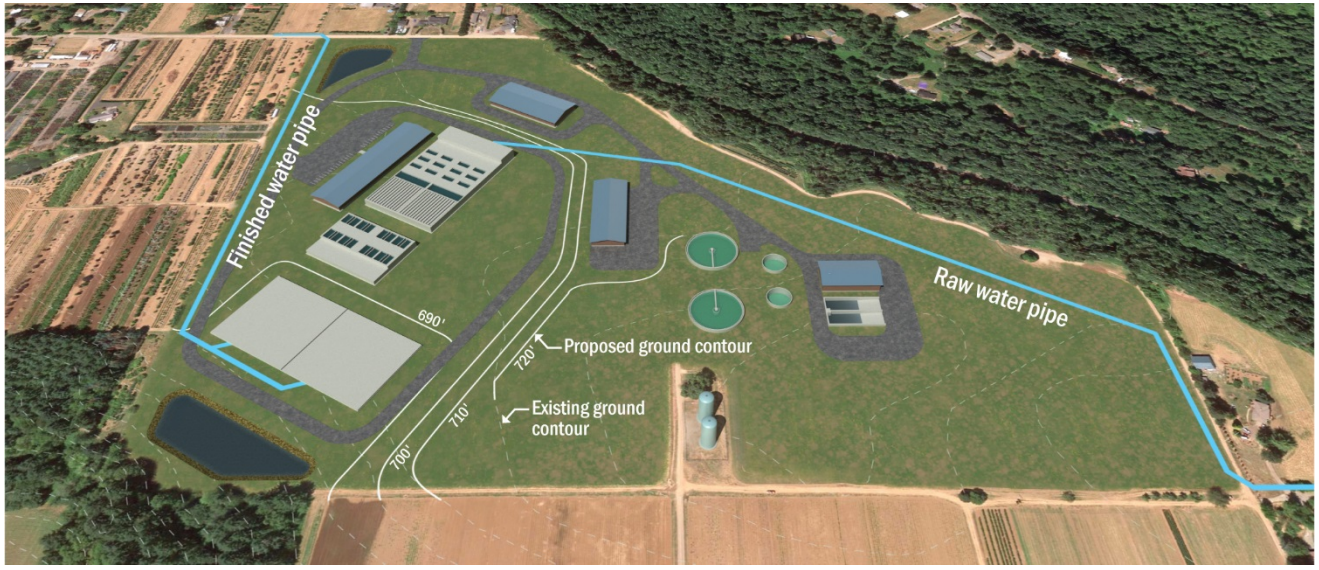
No Map for This Project



020 Planning

Major Project - added during FY17-18

W02229 Bull Run Filtration



This CIP Annual Report for Fiscal Year 2017-2018 is available on the Portland Water Bureau website:

https://www.portlandoregon.gov/water/cipar